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IN COOPERATION WITH THE LINCOLN INSTITUTE OF LAND POLICY

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DISCARTITION

A WATER PROTECTION STRATEGY FOR MONTANA
IN THE MISSOURI RIVER BASIN

Many Montanans are concerned that the water flowing out of the state will soon be claimed by downstream states whose use of the water is growing more rapidly than ours. It is also feared that given the political power of the lower basin states, we could find it difficult to defend our claimed right to future instate use of water in a national political arena. Therefore, the 1981 Montana Legislature directed the Department of Natural Resources and Conservation to develop a strategy to protect Montana's options for future instate water use in the face of expanding water development by downstream states.

Before discussing the proposed strategy developed by the Department, let us first look at the water supply situation in the Missouri River Basin, the threats to the use of its waters and other information that provided the Department with a foundation to develop the strategy.

Montana and Wyoming hold the headwaters of the Missouri River. Together with its major tributary, the Yellowstone River, the Missouri River flows through Montana, downstream through North Dakota, South Dakota, Nebraska, Iowa, Kansas, and Missouri.

Montana is an important contributor of water to the Missouri River system. The average annual outflow from Montana in the upper Missouri River adjusted at the 1975 level of development is

7,774,000 acre-feet per year; at the Montana-North Dakota state line the average flow of the Yellowstone River is about 8,804,000 acre-feet per year.

Montana contributes about 50 percent of the average streamflow at Sioux City, Iowa (21,725,000 acre-feet per year), and 19 percent of the streamflow at the mouth of the Missouri River (54,559,000 acre-feet per year) near Hermann, Missouri. Montana and Wyoming together contribute 76 percent of the streamflow at Sioux City, Iowa, the division point between the upper and lower basin, and the starting point for navigation.

The potential for conflict in the Missouri River Basin involves the 1944 Flood Control Act which authorized the Pick-Sloan Missouri Basin Program. This program is a compromise of two plans, one by the Army Corps of Engineers (the Pick Plan) and the other by the Bureau of Reclamation (the Sloan Plan). The Corps plan focused on the construction of large main stem reservoirs on the Missouri River for flood control and the development and maintenance of downstream navigation. The Bureau plan involved the development of water for consumptive purposes, primarily irrigation.

In passing the Act, Congress authorized a system of six main stem reservoirs, including the existing Fort Peck Dam, to control floods and to provide navigation in the lower Missouri River Basin. Hydroelectric power produced at these main stem dams and

other dams in the upper basin remain an important source of energy, primarily for the lower basin and for metropolitan areas east of the basin.

Beside the flood control and navigational benefits, Congress recognized the importance of water development for other purposes and authorized many irrigation projects and storage reservoirs throughout the upper and lower Missouri River Basin. Most important, Senators O'Mahoney and Milliken from Colorado and Wyoming had the foresight to realize back in 1944 that the lower Missouri basin states would attempt to preclude future consumptive use development by the upper basin states. These senators introduced, and Congress adopted, the O'Mahoney-Milliken amendment which specified that providing streamflows for navigation was not to interfere with upper basin development of water which arises west of the 98th Meridian. This action provided water for consumptive uses in Colorado, Montana, Wyoming, South Dakota, North Dakota, Kansas, and Nebraska.

Today, the perception of the Pick-Sloan Missouri Basin Program is different than initially conceived by its authors. The lower basin states have been receiving most of the benefits from the 1944 Act since the mid-1950's, when the last of the six main stem reservoirs was completed. These reservoirs have provided the lower basin states with a barge transportation industry that almost guarantees a 300-foot-wide channel, eight feet deep, for nine months of the year. The Corps of Engineers

have estimated that flood control benefits accrued primarily to the lower basin states are in excess of 1.7 billion dollars. The lower basin and urban areas east of the basin have been receiving about 68 percent of the hydropower generated from the main stem system; the upper basin receives about 32 percent.

All the main stem reservoirs are in three states--Montana, North Dakota, and South Dakota. These states have surrendered vast acreages of productive valley land to inundation. Montana alone gave up over 500,000 acres for Fort Peck Reservoir. In return for this land, and for providing the benefits of flood control and hydropower generation, the upper basin states were promised the development of consumptive uses under the Pick-Sloan Plan. To date, only about eight percent of the federal water projects intended for consumptive purposes have been completed and most of the contemplated projects have not been started. Meanwhile, consumptive uses by downstream states have expanded more rapidly than in the upper basin. In 1949, upper basin states used more than half (54%) of the irrigation water on nearly 3 million acres. By 1978, the situation had been reversed--lower basin states used nearly three-quarters (72%) of the irrigation water to service nine and one-half million acres. In that same year, lower basin states also used over ten times as much water (404,500 acre-feet per year) for energy-related depletions than was used in the four upstream states (38,400 acre-feet per year). However, it should be noted that water for irrigation and energy development is supplied from both surface and ground water within the basin.

Montana is presently irrigating about 2 million acres, but over 9 million more acres are irrigable. The Flood Control Act apparently allocated water to irrigate 5.2 million acres among the Missouri Basin states; well over 1 million of those acres are in Montana. Montanans have been slow to develop these acreages (only about 5 percent have so far been put under irrigation), but are still entitled to develop these lands today as we were in 1944.

Recent water development actions by the upper basin states have initiated the conflict between the upper and lower basins. The lower basin states perceive upper basin development as a threat because they do not want to lose any of their existing benefits and they also want water available for their future consumptive development. Thus, they have begun to challenge upper basin development in order to prevent additional upstream consumptive uses. These and other challenges to Montana take many forms, a few of particular concern are described below.

Energy Transportation Systems, Inc. (ETSI) has purchased 50,000 acre-feet per year of Lake Oahe water from South Dakota and the Bureau of Reclamation. ETSI plans to transport Missouri River water 280 miles to coal mines near Gillette, Wyoming. From there, the water would be used to slurry Wyoming coal 1,600 miles to power plants in Oklahoma and adjacent states. Although this quantity of water is only about two-tenths of one percent of the average annual flow (21,725,000 acre-feet) at Sioux City, Iowa

(equivalent to one-eighth to one-tenth of the total water that evaporates each year from Oahe Reservoir), the states of Missouri, Iowa, and Nebraska are concerned that this sale and interbasin transfer of Missouri River water is only the tip of the iceberg.

Several pieces of legislation have been introduced in Congress by the lower basin states to control upstream water use. Representative Bedell of Iowa introduced legislation to prohibit any state from selling or otherwise transferring interstate any waters located in the state for use outside that state unless all other states in the basin consent to the sale or transfer. If passed, this bill would have the effect of prohibiting all sales and interbasin transfers from the Missouri River Basin. During the last two sessions Representative Young of Missouri has introduced a bill that would grant the consent of Congress to the states of the Missouri River Basin to negotiate and enter into an interstate compact for the equitable allocation of the waters of the Missouri River Basin. Disturbing features of the first bill required that any compact or agreement not cause deterioration in the water quality of any state of the Missouri River Basin and not reduce the navigational capacity of the Missouri River.

In addition, the proposed water sale sparked two lawsuits (the States of Missouri, Iowa and Nebraska vs. Colonel Andrews Jr. et al., and Kansas City Southern Railway Company et al. vs.

Colonel Andrews Jr. et al.) which were filed August 1982 in the U.S. District Court in Nebraska. These suits attempt to halt the ETSI sale and diversion, contending that the Department of Interior unlawfully approved the 50,000 acre-feet per year depletion and the Corps of Engineers unlawfully issued a permit for construction of a water intake facility to make the depletions possible. The overtones to these two lawsuits suggest that the lower basin states would like to curb future depletions in the upper basin by having the 1944 Flood Control Act reinterpreted. The District Court recently ruled in favor of the lower basin states and the railroad that the Bureau of Reclamation did not have the authority to market water from the mainstem reservoirs. It is my understanding that the Bureau plans to appeal the decision. If the decision holds, the water marketing contract between the Bureau and Montana for 300,000 af/y from Fort Peck Reservoir will be invalid.

The High Plains study authorized by Congress in 1976 proposes alternatives that have been perceived as a threat to Montana and the other basin states in the future. This \$6 million Department of Commerce study, looked at alternatives for assuring adequate water supplies to the High Plains states, where the Ogallala aquifer is being rapidly depleted. By the year 2020, ground water depletions in this area are estimated to result in a loss to irrigation of more than one-third of the 14.3 million acres now supplied from the Ogallala aquifer. The High Plains Study Council, consisting of the governors of the six High Plain

states, has chosen several mitigating solutions, but the only long-term solution is to import water into the High Plains region. Two of the four import alternatives would divert about four million acre-feet per year from the Missouri River at either Lake Francis Case behind Fort Randall Dam or at St. Joseph, Missouri. This could possibly force the lower basin states to demand more water from the upper basin to meet their existing and future needs.

All of the other upper basin states are attempting to strengthen their position in negotiation or litigation by identifying water development priorities for the 1980's. For example, North Dakota's top priority is to develop 250,000 acres of irrigated land with water from the Garrison Reservoir Project. South Dakota wishes to withdraw 1.5 million acre-feet per year for irrigation in the Central South Dakota Project (CENDAX). Wyoming has authorized \$114 million for water development as a first step in a possible six-year, \$600 million statewide water development program.

Threats to upstream Missouri River water use could also arise from studies by the Army Corps of Engineers. The Missouri River Division of the Corps is completing a study of Mississippi River navigation that includes an analysis of the effects of Missouri River flows. Navigation on the Missouri River annually produces about \$20 million in benefits from the transportation of three million tons of freight and uses almost the entire flow of the

river. In contrast, more than 50 million tons are transported annually on the Mississippi River. Preliminary results of the study indicate that regulation of the Missouri River has a significant effect on the flows of the Mississippi River. No current authorizations relate the Missouri River regulation to benefits on the Mississippi, but the Corps of Engineers' study could lead to suggestions that Congress consider such authorization. Additionally, the Corps had been contemplating the development of a railroad-barge system which would allow barge traffic to transport 17 million tons of coal per year downstream of Sioux City, Iowa. This would increase total barge tonnage to the projected level of 20 million tons per year, and would only intensify the problem between the upper and lower basin states.

Studies completed by the DNRC in 1982 indicated that a real problem in the mainstem of the Missouri may arise sometime after the year 2000. By that time, upper basin depletions are projected to increase by 1.6 to 1.7 million acre-feet per year above the 1975 level of development and could affect navigation. However, actual harm to downstream navigation would not occur unless the basin states experience a prolonged drought similar to the nine year drought of the 1930's.

On the other hand, restricting development in the upper basin to maintain existing streamflows for navigation in the lower basin would probably have a major economic impact on the irrigation and energy/coal sectors. A preliminary economic analysis indicates that, in Montana alone, potential crop values of between \$35 and \$69 million (in 1980 dollars) could be lost in the year 2000, while lost energy-related taxes in the same year could range from \$233 to \$476 million. Similarly, in the remainder of the Missouri River Basin, restricting future water development for consumptive purposes could result in lost irrigation crop revenues amounting to between \$71 and \$674 million per year in the year 2000. For the year 2020, the losses could range between \$58 and \$987 million. Benefits for navigation would not increase by the year 2000 and would only range between \$2-5 million dollars by the year 2020. Benefits from hydropower would increase by \$13-24 million by 2000 and \$14-29 million by 2020. These very tentative economic results suggest that the highest valued use of the water is for consumptive purposes in the basin and not for navigation and hydropower production. They also indicate that by restricting consumptive use development to maintain flows for nonconsumptive uses, the basin could experience significant economic consequences.

The report also reviewed the three ways water has been apportioned between states; equitable apportionment (water apportioned by the U.S. Supreme Court to settle disputes brought

by a lawsuit among states); Congressional apportionment (action taken by Congress to settle water disputes among states); and interstate compacts (negotiated agreements among the states to administer water shortages, to divide water surpluses, or to provide planning and regulatory functions. The best way to resolve the differences between the upper and lower basins is through compact negotiations. Negotiations should be much less costly and more responsive to state needs. Today, most of the states have indicated that they are not ready to negotiate a compact for they realize that negotiations would be based more upon emotional and political concerns rather than the factual information and an understanding of the future water needs of each state. Hopefully, within 15 to 20 years, all the states will be in a position to negotiate an apportionment on the Missouri River. If compact negotiations break down the upper basin would receive better treatment under equitable apportionment by the U.S. Supreme Court based upon the O'Mahoney-Milliken Amendment of the 1944 Flood Control Act than by Congressional apportionment. Congress may not be equitable to the upper basin under Congressional apportionment because these states do not have the political power as compared to the lower basin.

Using the information presented above, the Department was able to develop a proposed strategy to protect Montana's options for future instate water use in the face of expanding downstream water development. The strategy is composed of six main components. It involves building up our defenses, readying an

offense, and providing sentinels to give advance warning of impending conflict or challenge to the use of our share of the Missouri River.

The first component of the strategy points out that Montana should rely on the 1944 Flood Control Act and, particularly, the O'Mahoney-Milliken Amendment as its first line of defense. Like the other upper basin states, Montana should insist that the Act has established a water allocation in the Missouri River Basin. This state should adopt the stance taken in 1965 by the Senate Interior and Insular Affairs Committee when it reported on legislation for the Garrison Project:

At the same time, however, the fundamental commitment of the Flood Control Act of 1944 should be recognized. It amounted to a compact, ratified by Congress, assuring the upper basin states that their sacrifice of productive lands to provide benefits for the lower basin would be compensated for by full development of other potentialities in the upper basin states.

The second component of the strategy deals with the need to monitor actions of either Congress or the other basin states that potentially threaten the Flood Control Act and, specifically, the O'Mahoney-Milliken Amendment. If legal action jeopardizes our interpretation of the law, Montana must respond promptly and effectively.

Third, we must carefully monitor water development activities in the other states to assure that they will not preclude or unnecessarily limit future water use in Montana. We must also be

alert for Congressional actions that would lead to the authorization and funding of downstream projects which would develop a large water supply and subsequently foreclose our future options to Missouri River water.

As a fourth element, Montana should promote a negotiated resolution of the Missouri Basin conflict and discourage confrontation. We should use the 1944 Flood Control Act as the framework upon which to build a negotiated settlement. All basin states have interests in the Missouri River and its tributaries, and they should work to resolve their differences through discussion and negotiation, rather than litigation or congressional intervention. Just as they share the same river, the basin states should share the same negotiation table. Perhaps agreement cannot be reached through honest and forthright discussion. But any subsequent litigation or Congressional action would at least be based on meaningful and understandable differences rather than emotional contrivance.

Discussions among the basin states have already begun under the auspices of the Missouri Basin States Association (MBSA). The governors of the ten states of the Missouri River Basin established the MBSA in September 1981, "To Conduct, encourage and participate in activities which promote interstate coordination of water resources management within the Missouri River Basin." Believing that the MBSA could serve as the forum for the identification, discussion, and possible resolution of

water issues of concern to the basin states, the 20-member Board of Directors have concentrated staff activities on developing a computerized basin hydrology information system, an interstate floodplain management program, background materials on interstate-interbasin water diversion, state water planning techniques, and historical aspects of the Pick-Sloan Missouri Basin Program. Since the ETSI controversy surfaced, the directors have been working to establish a process that will lead to conflict resolution and ultimately forge a basin states' coalition involving the governors, state legislatures, federal agencies and the basin congressional delegation. The development and adoption of this process is a very promising step for resolving our differences in the basin.

The fifth component in the strategy addresses the need to prepare for eventual water allocation proceedings in the Missouri basin. Montana must get its house in order. We must solidify our claims to existing uses by achieving realistic preliminary decrees in the Missouri and Yellowstone River basins as soon as possible. We must plan and establish future claims to our Missouri River water that will withstand attack by downstream states. We should consider a process not unlike the water reservation process that was implemented in the Yellowstone River Basin. The Yellowstone reservation process provided for a basinwide management plan that took into account available water supply and developed an allocation that provided for consumptive use needs as well as instream flow requirements. Montana should

be in a strong position to defend its future needs in the Yellowstone River Basin because of the implementation of the reservation process and because Congress ratified the Yellowstone River Compact which apportioned the waters of this basin between Montana, Wyoming and North Dakota. We must also quantify and resolve Indian and federal reserved water rights in Montana. Only through successful negotiations, can we complete the statewide adjudication and save Montana, the tribes and federal government millions of dollars. The other alternative to negotiations is litigation, which is considerably more expensive and does not provide the flexibility needed to resolve differences and improve relations. Negotiations will also provide essential information on water available for future appropriation and development. Many types of water projects with large financial costs may not be built until a firm water supply can be assured, whether they are on a reservation, on federal lands, or in private ownership. We must also resolve our differences with Wyoming regarding the Yellowstone River Compact and the Little Bighorn Basin. Major water development projects may not occur in the Yellowstone tributaries unless these uncertainties are resolved. By taking these and other actions now, we can develop the strongest possible position for achieving an allocation that protects all current water uses in Montana and provides for our future needs as well.

The final component in the strategy is that of encouraging the wise development and use of our water resources. The best means of claiming a supply of Missouri River water is to actually put the water to beneficial use. However, this is not to say we should rush forward in a mindless drive to seize a share of water before it is committed downstream. Rather, we need to take a careful look at our future consumptive and instream water requirements and proceed with a well-conceived, well-funded water development and management program. In doing so, Montana should support projects and activities that meet our social and environmental goals, and, at the same time, assure an adequate water supply for our future needs. To accomplish this component of the strategy, the state may need to evaluate other sources of revenue for water development. The existing water development program created by the 1981 legislature may not have provided enough funding to replace the unforeseen federal cutbacks in water development and to put the state into a desirable position before compact negotiations begin in the Missouri River basin. We should evaluate instate and out-of-state marketing of limited amounts of surplus water from existing and proposed state and federal reservoirs as a means to assist in the financing of future water projects. Other revenue sources should be evaluated, including the development of hydropower on existing state and federal dams. We may even wish to consider using more of the coal severance tax for water development.

In the process of developing this proposed strategy we have found that Montana is in a good position to deal with challenges from the lower Missouri Basin states. Montana is a headwater state where a large portion of the water originates and where it is physically available for meeting our present needs. There also appears to be ample water to meet our future requirements. Montana can also enjoy the legal protection needed to develop its water because the O'Mahoney-Milliken Amendment gives a preference to consumptive development in the upper basin.

However, regardless of our current strengths, we can ill afford to become complacent. The threat is real, and it seems safe to say that a conflict between the upper and lower basin states is inevitable; in fact, the opening shots have already been fired. Therefore, we must take firm action. Our proposed water protection strategy must serve as the broad base upon which we build a defense against any challenges to the use of our share of the Missouri River. The rewards of such an endeavor are immense. Failure could result in having to curtail our water development activities because legally superior downstream rights were allowed to become established.

Editors footnote

For further information, a summary report entitled "A Water Protection Strategy for Montana in the Missouri River Basin" is available from the Montana Department of Natural Resources and Conservation, 32 South Ewing, Helena, MT 59620.

SOME MUSINGS ABOUT A COMPACT FOR THE MISSOURI RIVER BASIN

by

Gary. D. Weatherford

Presented to the Select Committee on Water Marketing of the Montana
Legislature at its Seminar on Water Policy Management Options

Billings, Montana

July 13, 1984

Some Musings About a Compact for the Missouri River Basin*

by Gary D. Weatherford**

Compact Consciousness

Each river basin is a bioregional province with its own unique features, culture, and political personality. Outsiders can easily overlook a basin's low relief and misread its more dramatic contours. (I say this with conviction, having once gotten lost and rimmed-out high in the headwaters of this basin -- in the Absaroka wilderness.) As an outsider invited into your basin province, I hope to observe more than advise.

Whenever states quarrel over common waters, talk turns variously to litigation, legislation and negotiation. An interstate compact requires both legislation and negotiation; litigation is optional.

Compact consciousness is evident in the Missouri River Basin. The lower federal court ruling in the ETSI case,¹ blocking the out-of-basin diversion of water from Lake Oahe in South Dakota, recently prompted Iowa's Governor to call for a negotiated compromise and its Attorney General to suggest a compact.² The lower basin states of Nebraska, Iowa, Kansas,

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and Missouri have been circulating a draft barge traffic compact.³ Representative Young (MO) is sponsoring a bill in Congress that would consent to the negotiation of a compact by the basin states.⁴ Such selective soundings, of course, say nothing about the advisability, possible scope, or likelihood of a compact apportioning the interstate waters of the Missouri River Basin. I am sure that conventional wisdom (perhaps even Jimmy the Greek) would say that there are double-digit odds against getting the ten (or even the seven) more affected states of this basin to agree upon such a compact. One of the gratifying trends in water resources, however, is that people are no longer leaving the field to experts. Groundswells of public opinion can make the improbable happen. At the very least, the subject of compacts is and will remain a policy option that leaders must remain open to and, as such, it deserves serious scrutiny.

Montana's own compact experience includes, of course, the extant Yellowstone River Compact of 1951 with North Dakota and Wyoming (65 Stat. 663), participation in the ill-fated negotiation of a Columbia River Basin compact (1954-1968), and the circulation of a draft Missouri River Basin Compact in 1952-53 (prepared for the Missouri River States Committee by the Council of State Governments).⁵

Compact Elements

A compact is a formal agreement approved by the participating states and Congress.⁶ There is some question whether prior Congressional consent is necessary for interstate compact negotiations, but it traditionally has been sought in addition to ratification of the final negotiated document.⁷ The compact clause of the Constitution has been interpreted as "affording Congress a veto over those interstate agreements which might be prejudicial

to broader national interests."⁸

Interstate coordination and cooperation can occur, with federal blessing, outside the framework of a compact, of course, as the river basin planning commissions on the Missouri and other major waterways (under the Water Resources Planning Act of 1965) once showed and the Missouri Basin States Association now shows. Federally-chartered water corporations, patterned after the Tennessee Valley Authority or even the Communications Satellite Corporation, could operate without a compact.⁹ Also, in a practical sense, apportionment of interstate waters can occur incrementally with interstate support through the authorization, construction, and operation of federal water projects, such as those projected for your basin in the Pick-Sloan Plan and the Flood Control Act of 1944.¹⁰ And, under conditions of plenty, the use and management of interstate water can proceed with a tacit recognition of other states' interests, without the formal quantification of water rights. As water demands and water-related environmental impacts increase, however, expectations tend to become dashed and fears mount, eroding tacit forms of water co-existence and prompting efforts to secure enforceable shares in the resource through Congress, the U.S. Supreme Court, and /or a compact.

Compact Occurrence

The need to quantify water shares is illustrated by more than twenty interstate water apportionment compacts in the western United States.¹¹ Water compacts differ in their scope, structure, and relative achievements. They have dealt variously with boundary, navigation, fishing rights, water apportionment, pollution, water planning and flood control problems.¹² Some simply declare policies or rights, others establish on-going administrative compact commissions, made up of state representatives (with

or without regulatory authority), while a few (e.g., Delaware and Susquehanna) -- dubbed "federal-interstate" compacts -- create agencies jointly composed of federal and state representatives. The Delaware River Basin Compact (1961) and its "progeny", the Susquehanna River Compact (1970), are elaborate and comprehensive, and have been often cited in the past as the most advanced water compacts in conception and design. The Delaware and Susquehanna compact commissions have developed comprehensive plans and policies, water quality programs, licensed projects, adopted drought measures, and promoted flood control.¹³ Devisiveness and the waning support of New York, a headwater state in both compacts, has caused those two compact models to lose some of their luster.¹⁴

In general, interstate water compacts, while imperfect mechanisms, tend to be rated as worthwhile and moderately effective when compared to alternative means of approaching regional water problems.¹⁵

Compact Experience on the Colorado¹⁶

The focus of this paper is on the Colorado River Basin and what its compact experience might teach others. There is some logic in looking at the Colorado River system. First, it contributes some of its scarce waters to your Missouri River Basin through imports by Colorado and Wyoming into the North and South Platte. Second, its political complexity (involving seven states, more than 19 Indian Reservations, and Mexico), rivals your own (with ten states, multiple Indian reservations, and Canada involved). Third, its water supply-demand history has precipitated decades of formal combat and cooperation that may be instructive.

The Colorado River system is affected by two compacts: the basin-wide seven-state 1922 Colorado River Compact, and the five-state 1948 Upper Colorado River Basin Compact.¹⁷

The 1922 basin-wide compact broke new ground for interstate compacting. Prior compacts typically involved only two states and dealt with state boundary disputes.¹⁸ The 1922 compact (which became effective as a six-state accord in 1928 and was finally approved by hold-out Arizona in 1944) divided the consumptive use of the Colorado River's flow between upper and lower parts of the basin, muting upriver fears about preemptive downstream appropriations and facilitating federally-subsidized water and power development for Southern California. Several forces combined to produce the compact. The highly irrigable Imperial Valley was lobbying mightily for a federal dam on the river to provide storage, flood control and silt reduction, and for a diversion canal located entirely north of the U.S.-Mexico border. Los Angeles, competing with private power interests, became intent on obtaining electric power from the envisioned dam and reservoir at Boulder Canyon. The federal Reclamation Service's desire to construct a high dam to promote irrigation in the lower reaches of the basin became embodied in a formal report and legislative proposal in 1922. Pending in the U.S. Supreme Court at the time was the Wyoming v. Colorado lawsuit over the Laramie River¹⁹ which held out the prospect (later in June, 1922, the reality) that the high court would recognize the prior appropriation doctrine in interstate water disputes, giving the earlier (senior) appropriator in time preference over the later (junior) one. Fast-paced water development in Southern California could thus give that area senior rights over the planned and potential uses upstream.

All of these forces and prospects made the upstream states, which expected to develop more slowly, legitimately nervous. Led by Colorado, those states came to see the need for a compact-guaranteed allotment or reservation of sizeable shares of the river's flow for themselves. So, there was a rising mutuality of interest and sense of urgency -- Southern

California needed a recognized right to water to make any federal water project investment feasible, and the upper basin states needed a protected share of the flow. Commissioners representing the seven basin states, joined by President Harding's representative, Herbert Hoover, began negotiating the compact in January of 1922 and, after long days of argument, approved their compact document in November of the same year. Agreement could not be reached on water entitlements for each state; instead the compact divides water between a lower basin and an upper basin (the boundary lines run through a point, called Lees Ferry, about ten miles downstream from where the Glen Canyon Dam now sits).

The 1922 compact, while declaring that each of those sub-basins was apportioned perpetually "the exclusive beneficial consumptive use of 7,500,000 acre-feet of water per annum", provides that the upper states will not cause the flow of the river at Lees Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years..."²⁰ Practically speaking, this guaranteed minimum delivery requirement means the upper states bear the risk of shortage. The flow records on which this apportionment was based were for a limited period that we now know was abnormally high. Instead of the 16.4 million acre-feet per annum average flow that the negotiators assumed for the River at Lees Ferry, current estimates range from about 13.5 to 14.8, leaving the upper states with considerably less potential supply than the 7.5 million acre-feet proclaimed for them.²¹

The 1922 compact did many more things than create an upper and lower basin apportionment formula. It anticipated a water treaty by specifying how water for Mexico would be charged against the system. It made electric power generation subordinate to agricultural and domestic uses. It deferred the question of Indian water rights with the now famous (or infamous) disclaimer:

"Nothing in this compact shall be construed as affecting the obligations of the United States of America to Indian tribes," language later used in the Upper Colorado River Compact (and approximated in your own Yellowstone River Compact). The 1922 compact did not create an administrative mechanism such as a commission, although it did mandate interstate and federal state cooperation.

Since the 1922 compact did not apportion water to each state, there remained that task. The Boulder Canyon Project Act of 1928, over Arizona's objections, authorized the construction of Boulder Canyon (now Hoover) Dam, the All-American Canal for Imperial and Coachella Valleys, the approval of the 1922 compact as a six-state agreement, and consented to another possible compact that would apportion annually 0.3 million acre-feet to Nevada, 4.4 million acre-feet and half the surplus to California, and 2.8 million acre-feet plus half the surplus to Arizona. That latter tri-state compact was never negotiated, although the apportionment it suggested became a reality when the U.S. Supreme Court in the fourth Arizona v. California case concluded in 1963 that Congress delegated the power to the Secretary of the Interior to apportion water to those states by contract.²²

Mexico was recognized a right to 1.5 million acre-feet per annum in the international treaty of 1944.²³ Then the upper basin states, desiring more federally subsidized water projects for their region, realized that water rights had to precede development²⁴ and negotiated their own compact (essentially during three weeks) in 1948. The resulting Upper Colorado River Basin Compact, unlike its 1922 relative, did apportion water to individual states and did authorize a compact commission.²⁵ Wisely, given the uncertainty as to the amount of firm water available to it under the 1922 compact and climatic variability, the upper basin arrived

at a percentage formula of apportionment: 11.25 percent for New Mexico, 14 percent for Wyoming, 23 percent for Utah, and 51.75 percent for Colorado.²⁶ The interests of the four states are centered in the Upper Colorado River Commission, composed of a representative from each state and the United States, and located in Salt Lake City. The 1948 compact prepared the way for the Colorado River Storage Project Act of 1956 that authorized Glen Canyon Dam and a host of other upper basin projects.

The apportionment of water to Indian tribes in the Colorado River basin, an issue side-stepped by the 1922 and 1948 compacts, is only partially complete. Five lower Colorado River tribes were awarded reserved water rights in the latest Arizona v. California decision, those apportionments being chargeable against the entitlements of the states in which the reservations are located.²⁷ Other reservations have been variously litigating, negotiating or delaying quantification of their claims.²⁸

Another issue not addressed by the compact, water quality, became an international cause celebre in the early 1960's when highly saline return flows in the Wellton-Mohawk irrigation district in Arizona imperiled crops in Mexico's Mexicali Valley. Negotiations led finally to an accord tying the quality of the water delivered to Mexico to the quality of water at the Imperial Dam on the U.S. side.²⁹ Congress passed the Colorado River Basin Salinity Control Act of 1975 (PL 93-320) to provide controls on natural and man-made sources of salt. The salt control program is overseen by an interstate Colorado River Salinity Control Forum that symbolizes a united commitment by the seven states to make salt control a continuing federal responsibility.

Ground water in the basin, another subject omitted in the 1922 and 1948 compacts, is subject to state-by-state regulation. The federal government has stopped some people from pumping underflow near the mainstem in the

lower stretch of the River, thereby protecting the surface waters of the "system" covered by the compacts. Otherwise, ground water has remained outside the reach of the compacts.

Colorado Compact Lessons

Several observations can be drawn from the water compact experience on the Colorado and other rivers.

States must be highly motivated. It normally takes a formidable treat and/or threat to bring a state to a compact negotiation table. (The prospect of large-scale, federally subsidized water development and the fear of preemptive water appropriations within rival states combined to motivate the Colorado River Basin states.) Many conditions must coincide to motivate all interested states to negotiate. Typically, the status quo favors one or more states. Why would such a state ever want to change the status quo? One possible answer: it may face being dragged involuntarily into the U.S. Supreme Court or Congress where its advantage could be diluted or destroyed. It might be better for such a state use its advantage in such negotiations than to risk confrontations in which it has relatively less control or influence.

The basic point is this: it takes a coincidence of events and conditions to put a group of states in the frame of mind necessary to negotiate a compact. The participating states must have a strong sense, variously, of urgency, uncertainty, or potential advantage.

Compacts do not solve everything. Water compacts differ in their scope. Even where the scope of the negotiations is agreed upon at the outset, rarely can the negotiating parties reach consensus on all points. Typically the negotiators reach rough agreement on some points, and agree to disagree on others. Generally, in fact, some of the express terms

of agreement are purposefully left ambiguous and their refinement deferred due to lack of agreement. The possible water rights of Mexico and Indians were ambiguously alluded to in the Colorado River compacts; no reference was made in those documents to salinity, ground water, evaporation and seepage losses, fish and wildlife protection or interstate water marketing and trading.

One question a participating state should ask, then, given the fact that compacts do not solve all problems for all time, is: Will the formal framework and relations defined by a compact make it easier or harder to resolve remaining conflict?

Assumptions and risks lurk in compacts. Assumptions about water supply and demand -- past, present, and future -- underlie any interstate division of water. And assumptions can prove to be wrong. Disturbing but all-too-real drought, demographic or political conditions can prove earlier projections wrong. Who will bear the risk of error or change? As already noted, the lower basin of the Colorado shrewdly hedged its bet by requiring a minimum delivery of water from the upper basin. In addition, California obtained Congressional assurance in 1968 that prior uses will take precedence over the Central Arizona Project in the event of shortage.³⁰

States entering compact negotiations should make a deliberate effort to identify and assess improbable events and related risks.

Compact boundaries are not self-evident. Although river basins may seem to be logical units for water allocation and planning, states negotiating compacts do not have to extend or limit the reach of their agreement to a basin. The 1922 Colorado River Compact purported to cover the river "system," including all tributaries, but the U.S. Supreme Court has allowed Arizona to use its tributaries (e.g., Gila River) without that use being charged against Arizona's entitlement in the Colorado "system."³¹

This issue of spatial coverage would be most interesting in the Missouri River Basin setting. The Missouri contributes water and sediment to the Mississippi. Would the lower Mississippi states be formally represented in compact negotiations? Would all the surface waters draining the Missouri Basin be covered? What about riverine or non-riverine ground water?

The identification of the water subject to a compact, in short, is an important and negotiable matter.

Compact negotiations take time. Compact negotiations are normally prolonged. The Colorado basin compacts were negotiated comparatively quickly, within months. Typically a water compact takes years to hammer out. Such delay must be compared to litigation and legislation, which commonly are also drawn out. Arizona has sued California over the Colorado River four times since 1932; the latest suit was filed in 1952 and finally appears to be winding down. Major water legislation has almost always taken years to get through Congress. Now it is difficult to get Congress to focus on anything other than the federal budget, meaning that longer, not shorter, delays in legislative action can be expected. All methods of formally reducing interstate conflict over water consume time.

Compact Queries for Montana

How compelling is the status quo?

Headwater states, by definition, have a physical advantage. Unless constrained or restrained, they can withhold water from downstream states. As you know all too well, Montana and its sister Missouri Basin states west of the ninety-eighth meridian have another advantage given them by the O'Mahoney-Millikin Amendment of the 1944 Flood Control Act: their consumptive uses come first over the navigation uses on the Missouri River.³² That is an important part of the status quo.

The consumptive use preference is subject to judicial interpretation, however. One of the key issues pending in the Andrews case is whether transbasin, interstate diversions qualify as preferred consumptive uses. If not, one of the major markets for your water could fall outside of the preference clause. Is it possible, under such circumstances, that Montana might see advantage in an interstate effort to obtain Congressional approval of a basin-wide apportionment formula that, for example, might sanction a degree of both state protectionism and interstate export for Missouri River Basin water?

The compact negotiation and ratification process entails compromise and Congressional review. Presumably the O'Mahoney-Millikin consumptive use preference would be a subject the downstream barge traffic states would want discussed in any negotiations or legislative deliberations.

There is an important rule of interstate rivers that operates to reduce the leverage that an upstream state like Montana otherwise might possess. The U.S. Supreme Court does not normally enjoin downstream states from using water that upstream states do not presently need. This means a downstream state can end up using more than the entitlement it has been apportioned by a compact, statute or court. (California users have been enjoying, quite lawfully, an aggregate annual use that is more than 700,000 acre-feet over the state's 4.4 million, acre-feet base entitlement in the Colorado River.) This also means that downstream states have an incentive not to support the development of upstream consumptive uses. Traditionally, if an upstream state needed federal funding for its water development, it would find its neighbors downstream opposing the idea -- unless a bargain had been struck, as in the form of a "comprehensive" set of projects that provided benefits for both the upstream and downstream states. Given the bleak forecasts for new, heavily-subsidized federal water development, the old dynamic

of "distributive" (aka "pork barrel") politics may become less of a factor in regional water allocation. Still, if Montana needs anything out of Congress in the future that downstream states have the votes to thwart, the potential exists, does it not, for reopening the consumptive use preference? Or, quite independent of Montana's needs, downstream states conceivably could marshall the votes to alter or abolish the preference.

Another aspect of the status quo continues to encourage isolationism in the development and management of interstate water: putting water to beneficial consumptive use within a state remains the best hedge against the water claims of other states. At least as between multiple prior appropriation states, historic consumptive uses are likely to continue to prevail over projected uses in interstate litigation under the doctrine of "equitable apportionment."³³ Since the Missouri Basin encompasses states that follow competing riparian and prior appropriation laws, however, the outcome of equitable apportionment litigation between them is somewhat unpredictable. Also, the day may dawn in our lifetimes when well-documented reservations of water for fish, wildlife, recreation, water quality, and orderly growth may be fully sanctioned (even preferred over ill-conceived, hasty appropriations) within the flexible bounds of the equitable apportionment doctrine. In the world of the here and now, however, "investment-backed expectations" associated with early consumptive use and development continue to be protected by the U.S. Supreme Court.

How Conventional Will the Future Be?

On balance, conventional wisdom probably would suggest that a basin-wide water apportionment compact is not foreseeable. But conventional wisdom, for all its value, can blind people to both incremental and innovative change. It can dull senses that ought to be used to detect new challenges and opportunities.

It does not take much imagination to conceive of credible scenarios that would motivate headwater and flatland states alike in this basin to seek a compact. What if a Middle East conflagration triggered an all-out program of domestic energy mobilization involving calls for the further federalization (aka nationalization) of fossil fuel and related water resources? What if climatic change expanded the northern reach of irrigable lands in this region but reduced dramatically the snowpack in your headwaters? What if an accidental nuclear explosion radiated water supplies in other basins, creating unexpected growth and export demands on the Missouri Basin? What if catastrophic floods and river channel changes in the lower Mississippi prompted the nation to move toward a massive federal erosion and sediment control program for the Missouri and Upper Mississippi River Basins?

May not the important point be simply this: Headwater states should not expend all their time and talent erecting elaborate fortresses. Attention should continue to be given to basin-wide problems and solutions. And people within the state apparatus ought to be asked to ponder "improbables", such as regional water agreements and institutions, so your state can better maximize its positions and opportunities in the event the unexpected happens.

Conclusion: Toward a River Basin Community

Compacts represent one way states can formally relate to one another. Consensus can take other forms. The process of exploring common interests and uncommon differences need not lead to formal compact negotiations. Compacts are optional. The process of communicating and cooperating with neighboring states is less optional. Events may never compel you to consider a basin-wide compact. But the ongoing process of developing a clearer sense of an interstate community of interest arising from a common dependence on a river system may be important for your state's identity

and welfare. Arguments ought to focus not on compacts, but on perceptions of your river basin community. The improbability of a basin-wide compact should not prevent you from asking some of the same questions about interstate, state-tribal, and federal-state relations that would be posed by serious compact negotiations. What do you want your state's relationship to your basin, your Indian tribes, your sister states, and your federal government to be? You are actively engaged in pursuing many of the issues contained in those larger questions. In time, Montana's water policies and practices will reflect its answers to those overarching questions as readily as a pool reflects the image of one peering into it.

NOTES

1. Kansas City Southern Ry. v. Andrews.
2. Sioux City Journal, May 6, 1984.
3. Omaha World-Herald, April 17, 1984.
4. H.R. 2516.
5. See Boris and Krutilla, Water Rights and Energy Development in the Yellowstone River Basin (1980); Doerksen, Columbia River Interstate Compact: Politics of Negotiation (State of Washington Water Research Center, 1972); and Council of State Governments, "Missouri River Basin Compact, Revised Draft" (January, 1953).
6. U.S. Constit. art. I, Sec. 10: "No State shall, without the consent of Congress***enter into any Agreement or Compact with another State***."
7. See Hutchins, Water Rights Laws in the Nineteen Western States, Vol. III, at 82-84 (1977).
8. Muys, Interstate Water Compacts (Legal Study 14, National Water Commission, July, 1971), at 248; see Virginia v. Tennessee, 148 U.S. 503, at 517-20 (1893); cf. dictum in Dyer v. Sims, 341 U.S. 22, at 27. How far states might be able to go in avoiding federal involvement by adopting parallel policies and legislation rather than multilateral written agreements is an intriguing issue beyond the scope of my assignment.
9. See Solomon, Additional Alternative Arrangements for River Basins and Other Regions (Legal Study 15, National Water Commission, 1971).
10. 58 Stat. 887.
11. The following listing of the western compacts in effect as of 1974 is provided by Hutchins, Water Rights Laws in the Nineteen Western States, Vol. III, at 87, fn. 69 (1977): Animas-La Plata Project Compact (between Colorado and New Mexico), 82 Stat.897 (1968); Arkansas River Basin Compact (between Kansas and Oklahoma), 80 Stat. 1409 (1966); Arkansas River Basin Compact (between Oklahoma and Arkansas), 87 Stat. 569 (1973); Arkansas River Compact (between Colorado and Kansas), 63 Stat. 145 (1949); Bear River Compact (among Idaho, Utah, and Wyoming), 72 Stat. 38 (1958); Belle Fourche River Compact (between South Dakota and Wyoming), 58 Stat. 94 (1944); Canadian River Compact (among New Mexico, Texas, and Oklahoma), 66 Stat.74 (1952) ; Colorado River Compact (among Arizona, California,

Colorado, Nevada, New Mexico, Utah, and Wyoming), 45 Stat. 1057, 1064 (1928) (the text of this Compact appears in 70 Cong. Rec. 324 (1928); Costilla Creek Compact (between Colorado and New Mexico), 77 Stat. 350 (1963); Kansas-Nebraska Big Blue River Compact, 86 Stat. 193 (1972); Klamath River Basin Compact (between California and Oregon), 71 Stat. 497 (1957); La Plata River Compact (between Colorado and New Mexico), 43 Stat. 796 (1925); Pecos River Compact (between New Mexico and Texas), 63 Stat. 159 (1949); Republican River Compact (among Colorado, Kansas and Nebraska), 57 Stat. 86 (1943); Rio Grande Compact (among Colorado, New Mexico, and Texas), 53 Stat. 785 (1939); Sabine River Compact (between Texas and Louisiana), 68 Stat. 690 (1954); Snake River Compact (between Idaho and Wyoming), 64 Stat. 29 (1950); South Platte River Compact (between Colorado and Nebraska), 44 Stat. 195 (1926); Upper Colorado River Basin Compact (among Arizona, Colorado, New Mexico, Utah, and Wyoming), 63 Stat. 31 (1949); Upper Niobrara River Compact (between Nebraska and Wyoming), 83 Stat. 86 (1969); and Yellowstone River Compact (among Montana, North Dakota, and Wyoming), 65 Stat. 663 (1951).

12. See, generally, Muys, supra, note 8, at 5-240.
13. See Muys, supra, note 8, at 105-202.
14. See Comptroller General, Federal-Interstate Compact Commissions: Useful Mechanisms for Planning and Managing River Basin Operations (GAO Report to Congress CED-81-34, February 20, 1981).
15. E.g., see, generally, Muys, supra, note 8, at 355-392.
16. The premier history of the 1922 Colorado River Compact is by Hundley, Water and the West (Berkeley: Univ. of Calif. Press, 1975), who is contributing a summary and update of Colorado River politics entitled "The West Against Itself: The Colorado River--An Institutional History" to a forthcoming 1985 book (untitled) edited by Lee Brown and Gary Weatherford and scheduled for publication by the University of New Mexico Press. I have relied heavily on Hundley's work in this section of the paper.
17. The text of these compacts appears at 70 Cong. Rec. 324 (1928) and 63 Stat. 31 (1949), respectively, and also in U.S. Dept. of the Interior, Documents of the Use and Control of the Waters of Interstate and International Streams (T. Richard Witmer, ed., 1956), at 39 and 218.

18. See Barton, Interstate Compacts in the Political Process (Chapel Hill: University of North Carolina Press, 1965), at 3.
19. 259 U.S. 419 (1922).
20. Article III, sections (a) and (d).
21. See Weatherford and Jacoby, "Impact of Energy Development on the Law of the Colorado River," 15 Nat. Res. J. 171 (1975).
22. 373 U.S. 546 (1963).
23. 59 Stat. 1219.
24. "The need for a determination of the rights of the respective States to deplete the flow of the Colorado River...is most pressing." U.S. Dept. of the Interior, The Colorado River (1946) at 21.
25. 63 Stat. 31 (1949).
26. A block of 50,000 acre-feet per year was dedicated to Arizona off the top in recognition of the fact that a small portion of that state is located in the upper basin.
27. 373 U.S. 546 (1963), 376 U.S. 340 (1964), _____ U.S. _____ (1983).
28. See survey of Indian claims in Folk-Williams, What Indian Water Means to the West (Santa Fe: Western Network, 1982).
29. See, generally, the international symposium on Colorado River salinity in 15 Nat. Res. J. (January, 1975).
30. See 43 U.S.C., Sec. 1501, at 301.
31. See Arizona v. California, 373 U.S. 546 (1963).
32. Subsection 1(b) of the act (58 Stat. 887) provides:

The use for navigation, in connection with the operation and maintenance of such works herein authorized for construction, of waters arising in States lying wholly or partly west of the ninety-eighth meridian shall be only such use as does not conflict with any beneficial consumptive use, present or future, in States lying wholly or partly west of the ninety-eighth meridian, of such waters for domestic, municipal, stock water, irrigation, mining or industrial purposes.
33. See, e.g., Colorado v. New Mexico, _____ U.S. _____ (June 6, 1984).

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Biographical Sketch

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PROTECTING MONTANA'S WATER FOR FUTURE USE:
WATER RESERVATION HISTORY, STATUS AND ALTERNATIVES
(Introduction, Summary and Discussion)

BY

MARK D. O'KEEFE

PRESENTATION BEFORE THE SELECT COMMITTEE ON WATER MARKETING

JULY 13, 1984

CHAPTER 1

INTRODUCTION

The management and use of existing and potential water supplies are topics of critical importance to Montana today. The availability of water has profoundly affected the physical and social organizations which have developed in the state. Historic use of water for human consumption, irrigation, industry, transportation, recreation and power generation helped shape the way of life Montanans have come to enjoy.

Water is crucial to every type of human endeavor; indeed to human life itself. Water resources in Montana, while somewhat renewable, are limited. This being so, the question of how to use these resources, both now and in the future, is debated by almost everyone with a fanatical zeal. Decisions made concerning the protection and utilization of Montana's waters are rarely unanimous.

Some feelings about water, however, are commonly held by most Montanans. One of these beliefs is that the water in the state's rivers is "ours" and should be protected against claims made on it by "them". Call the attitude self-serving. Call it naive. Call it just plain stupid, but don't for a minute think that Montanans are about to abandon this attitude. It's part of Montana's heritage.

Since the early 1900's, Montana has developed a system of law concerning water use which is similar to those in other western states. One aspect unique to Montana water law is the existence of statutes that allow reservation of water today for preferred uses in the future.

The implementation of this system in the Yellowstone River Basin of Montana in 1978 was unprecedented in United States history. The continuing saga of how Montana makes the system work and how well reservations actually protect the state's waters is worth constant attention by all those interested in Montana's future.

The need to adapt the protection concept activated by the Yellowstone River Reservations to other basins in the state is commonly acknowledged. The Missouri River Basin is a likely candidate for state-initiated protection in light of recently perceived threats to Montana's future water development. Water marketing discussions, downstream states' claims to large flow volumes for nonconsumptive use, unquantified federal and Indian reserved water rights in the Basin and conflicting instate demands on the available water combine to raise serious questions about future economic and environmental protection options for the Missouri River Basin.

For Montana to make wise decisions on the many water use options it faces, it is necessary to monitor and critically evaluate not only instate situations, but also changes in regional and neighboring states' thinking on water use situations affecting Montana. Such vigilance will be rewarded with important insights about what Montana's neighbors are thinking and what the state may need to do to assure that avenues for future water development remain open.

Any water management decisions made by Montana about the preferred future uses of its water must be made after researching and weighing all available strategies in light of both state and federal law. This writer believes that the steps Montana has taken in the past to-

ward protecting its water resources have shown wisdom, imagination, initiative and fortitude. I also believe the next steps, particularly those taken to protect future uses in the Missouri Basin, deserve further study before they are taken. The need to protect future water use does not forestall the decision currently being contemplated by the state on water marketing. How to protect water resources and preserve Montana's quality of life is the real question, not when.

CHAPTER 7

SUMMARY AND DISCUSSION

One of the major issues recently being faced in the United States, the West and Montana is how we manage and use our water resources. An old Chinese proverb states: "He who rules the mountain rules the river." While that may be true in China, Montana's control of the headwaters of three major drainages is not sufficient to protect its water resources from real or perceived threats posed by other states or industrial entities. Realizing this, Montana has developed a unique system in Western Water Law to preserve its water resources for future in-state development. Known as the Montana Water Reservation Process, this system of inventorying and quantifying future water demands has enabled the state to develop and implement a basin-wide water management plan in Montana's Yellowstone Basin.

The reservation system in Montana developed because of a gradual increase in the state's awareness of its governmental responsibility for protecting and enhancing the public interest involved with water resources. To protect the economic opportunities offered by the state's water resources and to preserve the quality of the environment, state policy makers chose to examine innovative approaches to water management. The resultant modifications to Montana's water law constituted a significant break from past practices and reflected the realization that the state's water resources would soon be subjected to mounting pressure from forces outside Montana.

With reservation statutes in place, the state began the long, arduous process of quantifying and prioritizing future uses in the Yellowstone Basin. Adopted by the Board of Natural Resources and Conservation on December 15, 1978, the Yellowstone Reservations are being developed according to the methods prescribed in the reservation determination. Reservants in the Basin have taken different approaches to using their reserved water to use, depending on whether the reservations are consumptive or nonconsumptive. The eventual success of the water reservation system depends on the actual use of the Basin's water for the purposes prescribed during the system's establishment.

Activities that take place beyond Montana's borders can influence management of the state's water resources. The need to monitor the political developments which led to such actions in neighboring states is exemplified by an examination of the ongoing discussions in Wyoming circles concerning the implementation of an instream flow protection strategy for their state. As Montana's upstream neighbor on the major tributaries of the Yellowstone River, Wyoming's move to adopt an instream flow protection mechanism could theoretically benefit Montana in terms of the availability of future water quantities in the Yellowstone Basin. The future decisions made in Wyoming concerning instream protection will be indications of possible value shifts by Wyoming's populace, and these deserve Montana's attention. However, water quantities in the Basin are apportioned between Montana and Wyoming under the provisions of the Yellowstone Compact of 1950, and regardless of Wyoming's decisions on instream protection, it's unlikely that Montana's southern neighbors will curtail their attempts to fully develop their share of the Basin's water supply.

Along with current study of the issues associated with possible adoption of a water marketing strategy for the state, the state must continue to examine the protection of future water uses in the Montana portion of the Missouri Basin. To protect these waters, decision makers must be familiar with the myriad issues affecting the management and future availability of the Basin's water.

For discussion purposes, Montana's Missouri River Basin can conveniently be split at Great Falls. Above the several hydroelectric facilities at Great Falls, the question of water quantities available for any future use at all is being hotly debated. Primarily due to the huge water rights claimed for hydroelectric generation, development of new consumption uses in the Upper Basin may become impossible in the future. The recent issuance of the DNRC Final Administration Order on Canyon Ferry Reservoir maintains that there is still water available for development in the Upper Basin, but the decision will undoubtedly be challenged in the courts.

The ability of the state to condition new water use permits in the Missouri Basin to protect existing water uses is presently being challenged in the courts. Now before the Montana Supreme Court, the case of *Montana Power Company vs. Monforton* questions the effectiveness of Montana's Water Permitting System and raises the side issue of validity of hydro-power rights in the Missouri Basin. The decision in this case should provide a much needed glimpse of the Supreme Court's thinking on the water use situation in the Missouri Basin.

The Missouri Basin below Great Falls has a different set of circumstances controlling its future. Perhaps the biggest unknown in this portion of the Basin is the existence of both federal and Indian reserved

rights which have yet to be quantified. While the state has been actively attempting to negotiate the quantities of these rights with both the federal government and tribal representatives since 1979, progress has been slow and no agreements have yet been reached. Before the water resources of the Missouri can be effectively developed and managed, these reserved rights must be quantified.

Another example of a possible major reserved water right in the Missouri Basin is associated with the 149-mile stretch of river protected under the Federal Wild and Scenic Rivers Act. The establishment of an instream flow in this portion of the river may have an adverse effect on the state's ability to pursue future consumptive development upstream of Fort Peck Reservoir. The extent of this effect will not be known until future needs in the Basin are quantified and flow levels for instream purposes are determined.

The quantity of water held in the Fort Peck Reservoir on the Missouri River is important to both the issues of possible water marketing and future water development potential for Montana. The ability of the state to market up to 300,000 acre-feet of water from the reservoir already involves Montana in water sales for industrial uses. The inclusion of the Fort Peck Reservoir under the provisions of the 1944 Flood Control Act allows Montana to argue that the future consumptive development of water resources from the Montana portion of the Missouri River is guaranteed under the Pick-Sloan Plan. The large storage capacity of Fort Peck will remain an important factor in planning and implementing any future management schemes in the Basin.

The question of the validity of applying Montana's water reservation

system to the Missouri River is one not only of effect but of timing. Montana must protect whatever water remains in the Basin after historical uses are quantified if it wishes to keep economic development options open now and in the future. The desire to preserve Montana's options demands that the mechanism chosen to accomplish this goal be designed to afford the maximum protection possible. Adoption or rejection of a water marketing system at this time should not affect Montana's ability to make future attempts to protect undeveloped water.

Water reservations in Montana work well as a planning and management tool among the in-state water users. How well reservations, as currently constructed, would fare in protecting Montana's right to future water development in an interstate arena is an untested matter. The need to evaluate the intertwined issues of the Missouri River Basin before selecting the appropriate protection measures must again be emphasized. If the present reservation system is deemed best for the Missouri Basin, lessons learned in the Yellowstone Basin process must be heeded and adjustments made to the system. Before any decision is made, optional methods of protecting Montana's water for future uses must be catalogued, investigated and creatively evaluated. The resulting decision should ensure a strategy most appropriate to the complex water use situation in the Missouri Basin.

APPENDIX A

YELLOWSTONE RIVER COMPACT, 1950

YELLOWSTONE RIVER COMPACT, 1950

Signatory States: Montana, North Dakota and Wyoming

Rivers Controlled: Yellowstone River and its tributaries (Clarks Fork, Big Horn, Tongue and Powder), excluding Yellowstone National Park.

Ratifications:

Wyo. Stat. §41-511 (1957) [Act of Jan. 27, 1951, Wyo. Sess. Laws p.7]
Mont. Rev. Code §89-903 (1947) [Act of Feb. 13, 1951, Mont. Laws p. 58]
N. D. Century Code Ann. §61-23-01 (1960) [Act of March 7, 1951, N. D. Laws p. 505]

Summary:

The Compact deals basically with dividing the waters of the four tributaries to the Yellowstone River. To all tributaries the following rules apply: 1) existing rights as of January 1, 1950 maintain their status quo; 2) no water may be diverted from the Yellowstone River Basin without consent from all states; 3) existing and future domestic and stock water uses including stock water reservoirs up to a capacity of 20 acre-feet are exempted from provisions of the Compact.

The unappropriated or unused total divertible flow of each tributary after needs for supplemental supply for existing rights are met, is allocated to Wyoming and Montana on a percentage basis.

YELLOWSTONE RIVER COMPACT, 1950

The State of Montana, the State of North Dakota, and the State of Wyoming, being moved by consideration of interstate comity, and desiring to remove all causes of present and future controversy between said States and between persons in one and persons in another with respect to the waters of the Yellowstone River and its tributaries, other than waters within or waters which contribute to the flow of streams within the Yellowstone National Park, and desiring to provide for an equitable division and apportionment of such waters, and to encourage the beneficial development and use thereof, acknowledging that in future projects or programs for the regulation, control and use of water in the Yellowstone River Basin the great importance of water for irrigation in the signatory States shall be recognized, have resolved to conclude a Compact as authorized under the Act of Congress of the United States of America, approved June 2, 1949 (Public Law 83, 81st Congress, First Session), for the attainment of these purposes, and to that end, through their respective governments, have named as their respective Commissioners:

For the State of Montana:

Fred E. Buck
A. W. Bradshaw
H. W. Bunston
John Herzog
John M. Jerussi
Ashton Jones
Chris. Josephson
A. Wallace Kingsbury

P. M. Leonard
Walter M. McLaughlin
Dave M. Manning
Joseph Muggli
Chester E. Onstad
Ed F. Parriott
R. R. Renne
Keith W. Trout

For the State of North Dakota:

I. A. Acker
J. J. Walsh

Einar H. Dahl

For the State of Wyoming:

L. C. Bishop
Earl T. Bower
J. Harold Cash
Ben F. Cochrane
Ernest J. Goppert
Richard L. Greene
E. C. Gwillim
E. J. Johnson
Lee E. Keith

N. V. Kurtz
Harry L. Littlefield
R. E. McNally
Will G. Metz
Mark N. Partridge
Alonzo R. Shreve
Charles M. Smith
Leonard F. Thornton
M. B. Walker

who, after negotiations participated in by R. J. Newell, appointed as the representative of the United States of America, have agreed upon the following articles, to-wit:

ARTICLE I

A. Where the name of a State is used in this Compact, as a party thereto, it shall be construed to include the individuals, corporations, partnerships, associations, districts, administrative departments, bureaus, political subdivisions, agencies, persons, permittees, appropriators and all others using, claiming, or in any manner asserting any right to the use of the waters of the Yellowstone River System under the authority of said State.

B. Any individual, corporation, partnership, association, district, administrative department, bureau, political subdivision, agency, person, permittee, or appropriator authorized by or under the laws of a signatory State, and all others using, claiming, or in any manner asserting any right to the use of the waters of the Yellowstone River System under the authority of said State, shall be subject to the terms of this Compact. Where the singular is used in this article, it shall be construed to include the plural.

ARTICLE II

A. The State of Montana, the State of North Dakota, and the State of Wyoming are herein-after designated as "Montana," "North Dakota," and "Wyoming," respectively.

B. The terms "Commission" and "Yellowstone River Compact Commission" mean the agency created as provided herein for the administration of this Compact.

C. The term "Yellowstone River Basin" means areas in Wyoming, Montana, and North Dakota drained by the Yellowstone River and its tributaries, and includes the area in Montana known as Lake Basin, but excludes those lands lying within Yellowstone National Park.

D. The term "Yellowstone River System" means the Yellowstone River and all of its tributaries, including springs and swamps, from their sources to the mouth of the Yellowstone River near Buford, North Dakota, except those portions thereof which are within or contribute to the flow of streams within the Yellowstone National Park.

E. The term "Tributary" means any stream which in a natural state contributes to the flow of the Yellowstone River, including interstate tributaries and tributaries thereof, but excluding those which are within or contribute to the flow of streams within the Yellowstone National Park.

F. The term "Interstate Tributaries" means the Clarks Fork, Yellowstone River; the Bighorn River (except the Little Bighorn River); the Tongue River; and the Powder River, whose confluences with the Yellowstone River are respectively at or near the city (or town) of Laurel, Big Horn, Miles City, and Terry, all in the State of Montana.

G. The terms "Divert" and "Diversion" mean the taking or removing of water from the Yellowstone River or any tributary thereof when the water so taken or removed is not returned directly into the channel of the Yellowstone River or of the tributary from which it is taken.

H. The term "Beneficial Use" is herein defined to be that use by which the water supply of a drainage basin is depleted when usefully employed by the activities of man.

I. The term "Domestic Use" shall mean the use of water by an individual, or by a family unit or household for drinking, cooking, laundering, sanitation and other personal comforts and necessities; and for the irrigation of a family garden or orchard not exceeding one-half acre in area.

J. The term "Stock Water Use" shall mean the use of water for livestock and poultry.

ARTICLE III

A. It is considered that no Commission or administrative body is necessary to administer this Compact or divide the waters of the Yellowstone River Basin as between the States of Montana and North Dakota. The provisions of this Compact, as between the States of Wyoming and Montana, shall be administered by a Commission composed of one representative from the State of Wyoming and one representative from the State of Montana, to be selected by the Governors of said States as such States may choose, and one representative selected by the Director of the United States Geological Survey or whatever Federal agency may succeed to the functions and duties of that agency, to be appointed by him at the request of the States to sit with the Commission and who shall, when present, act as Chairman of the Commission without vote, except as herein provided.

B. The salaries and necessary expenses of each State representative shall be paid by the respective State; all other expenses incident to the administration of this Compact not borne by the United States shall be allocated to and borne one-half by the State of Wyoming and one-half by the State of Montana.

C. In addition to other powers and duties herein conferred upon the Commission and the members thereof, the jurisdiction of the Commission shall include the collection, correlation, and presentation of factual data, the maintenance of records having a bearing upon the administration of this Compact, and recommendations to such States upon matters connected with the administration of this Compact, and the Commission may employ such services and make such expenditures as reasonable and necessary within the limit of funds provided for that purpose by the respective States, and shall compile a report for each year ending September 30 and transmit it to the Governors of the signatory States on or before December 31 of each year.

D. The Secretary of the Army; the Secretary of the Interior; the Secretary of Agriculture; the Chairman, Federal Power Commission; the Secretary of Commerce, or comparable officers of whatever Federal agencies may succeed to the functions and duties of these agencies, and such other Federal officers and officers of appropriate agencies, of the signatory States having services or data useful or necessary to the Compact Commission, shall cooperate, ex-officio, with the Commission in the execution of its duty in the collection, correlation, and publication of records and data necessary for the proper administration of the Compact; and these officers may perform such other services related to the Compact as may be mutually agreed upon with the Commission.

E. The Commission shall have power to formulate rules and regulations and to perform any act which they may find necessary to carry out the provisions of this Compact, and to amend such rules and regulations. All such rules and regulations shall be filed in the office of the State Engineer of each of the signatory States for public inspection.

F. In case of the failure of the representatives of Wyoming and Montana to unanimously agree

on any matter necessary to the proper administration of this Compact, then the member selected by the Director of the United States Geological Survey shall have the right to vote upon the matters in disagreement and such points of disagreement shall then be decided by a majority vote of the representatives of the States of Wyoming and Montana and said member selected by the Director of the United States Geological Survey, each being entitled to one vote.

G. The Commission herein authorized shall have power to sue and be sued in its official capacity in any Federal Court of the signatory States, and may adopt and use an official seal which shall be judicially noticed.

ARTICLE IV

The Commission shall itself, or in conjunction with other responsible agencies, cause to be established, maintained, and operated such suitable water gaging and evaporation stations as it finds necessary in connection with its duties.

ARTICLE V

A. Appropriative rights to the beneficial uses of the water of the Yellowstone River System existing in each signatory State as of January 1, 1950, shall continue to be enjoyed in accordance with the laws governing the acquisition and use of water under the doctrine of appropriation.

B. Of the unused and unappropriated waters of the Interstate tributaries of the Yellowstone River as of January 1, 1950, there is allocated to each signatory State such quantity of that water as shall be necessary to provide supplemental water supplies for the rights described in paragraph A of this Article V, such supplemental rights to be acquired and enjoyed in accordance with the laws governing the acquisition and use of water under the doctrine of appropriation, and the remainder of the unused and unappropriated water is allocated to each State for storage or direct diversions for beneficial use on new lands or for other purposes as follows:

1. Clarks Fork, Yellowstone River
 - a. To Wyoming.....60%
 - To Montana.....40%
 - b. The point of measurement shall be below the last diversion from Clarks Fork above Rock Creek.
2. Bighorn River (Exclusive of Little Bighorn River)
 - a. To Wyoming.....80%
 - To Montana.....20%
 - b. The point of measurement shall be below the last diversion from the Bighorn River above its junction with the Yellowstone River, and the inflow of the Little Bighorn River shall be excluded from the quantity of water subject to allocation.
3. Tongue River
 - a. To Wyoming.....40%
 - To Montana.....60%
 - b. The point of measurement shall be below the last diversion from the Tongue River above its junction with the Yellowstone River.

4. Powder River (Including the Little Powder River)

- a. To Wyoming.....42%
- To Montana.....58%

- b. The point of measurement shall be below the last diversion from the Powder River above its junction with the Yellowstone River.

C. The quantity of water subject to the percentage allocations, in Paragraph 8 1, 2, 3, and 4 of this Article V, shall be determined on an annual water year basis measured from October 1st of any year through September 30th of the succeeding year. The quantity to which the percentage factors shall be applied through a given date in any water year shall be, in acre-feet, equal to the algebraic sum of:

- 1. The total diversions, in acre-feet, above the point of measurement, for irrigation, municipal, and industrial uses in Wyoming and Montana developed after January 1, 1950, during the period from October 1st to that given date;

- 2. The net change in storage, in acre-feet, in all reservoirs in Wyoming and Montana above the point of measurement completed subsequent to January 1, 1950, during the period from October 1st to that given date;

- 3. The net change in storage, in acre-feet, in existing reservoirs in Wyoming and Montana above the point of measurement, which is used for irrigation, municipal, and industrial purposes developed after January 1, 1950, during the period October 1st to that given date;

- 4. The quantity of water, in acre-feet, that passed the point of measurement in the stream during the period from October 1st to that given date.

D. All existing rights to the beneficial use of waters of the Yellowstone River in the States of Montana and North Dakota, below Intake, Montana, valid under the laws of these States as of January 1, 1950, are hereby recognized and shall be and remain unimpaired by this Compact. During the period May 1 to September 30, inclusive, of each year, lands within Montana and North Dakota shall be entitled to the beneficial use of the flow of waters of the Yellowstone River below Intake, Montana, on a proportionate basis of acreage irrigated. Waters of tributary streams, having their origin in either Montana or North Dakota, situated entirely in said respective States and flowing into the Yellowstone River below Intake, Montana, are allotted to the respective States in which situated.

E. There are hereby excluded from the provisions of this Compact:

- 1. Existing and future domestic and stock water uses of water: Provided, That the capacity of any reservoir for stock water so excluded shall not exceed 20 acre-feet;

- 2. Devices and facilities for the control and regulation of surface waters.

F. From time to time the Commission shall re-examine the allocations herein made and upon unanimous agreement may recommend modifications therein as are fair, just, and equitable, giving consideration among other factors to:

- Priorities of water rights;

- Acreage irrigated;

- Acreage irrigable under existing works; and

- Potentially irrigable lands.

ARTICLE VI

Nothing contained in this Compact shall be so construed or interpreted as to affect adversely any rights to the use of the waters of Yellowstone River and its tributaries owned by or for Indians, Indian tribes, and their reservations.

ARTICLE VII

A. A lower signatory State shall have the right, by compliance with the laws of an upper signatory State, except as to legislative consent, to file application for and receive permits to appropriate and use any waters in the Yellowstone River System not specifically apportioned to or appropriated by such upper State as provided in Article V; and to construct or participate in the construction and use of any dam, storage reservoir, or diversion works in such upper State for the purpose of conserving and regulating water that may be apportioned to or appropriated by the lower State: Provided, That such right is subject to the rights of the upper State to control, regulate, and use the water apportioned to and appropriated by it: And, provided further, That should an upper State elect, it may share in the use of any such facilities constructed by a lower State to the extent of its reasonable needs upon assuming or guaranteeing payment of its proportionate share of the cost of the construction, operation, and maintenance. This provision shall apply with equal force and effect to an upper State in the circumstance of the necessity of the acquisition of rights by an upper State in a lower State.

B. Each claim hereafter initiated for an appropriation of water in one signatory State for use in another signatory State shall be filed in the Office of the State Engineer of the signatory State in which the water is to be diverted, and a duplicate copy of the application or notice shall be filed in the office of the State Engineer of the signatory State in which the water is to be used.

C. Appropriations may hereafter be adjudicated in the State in which the water is diverted, and where a portion or all of the lands irrigated are in another signatory State, such adjudications shall be confirmed in that State by the proper authority. Each adjudication is to conform with the laws of the State where the water is diverted and shall be recorded in the County and State where the water is used.

D. The use of water allocated under Article V of this Compact for projects constructed after the date of this Compact by the United States of America or any of its agencies or instrumentalities, shall be charged as a use by the State in which the use is made: Provided, That such use incident to the diversion, impounding, or conveyance of water in one State for use in another shall be charged to such latter State.

ARTICLE VIII

A lower signatory State shall have the right to acquire in an upper State by purchase, or through exercise of the power of eminent domain, such lands, easements, and rights-of-way for the construction, operation, and maintenance of pumping plants, storage reservoirs, canals, conduits, and appurtenant works as may be required for the enjoyment of the privileges granted herein to such lower State. This provision shall apply with equal force and effect to an upper State in the circumstance of the necessity of the acquisition of rights by an upper State in a lower State.

ARTICLE IX

Should any facilities be constructed by a lower signatory State in an upper signatory State under the provisions of Article VII, the construction, operation, repairs, and replacements of such facilities shall be subject to the laws of the upper State. This provision shall apply with equal force and effect to an upper State in the circumstance of the necessity of the acquisition of rights by an upper State in a lower State.

ARTICLE X

No water shall be diverted from the Yellowstone River Basin without the unanimous consent of all the signatory States. In the event water from another river basin shall be imported into the Yellowstone River Basin or transferred from one tributary basin to another by the United States of America, Montana, North Dakota, or Wyoming, or any of them jointly, the State having the right to the use of such water shall be given proper credit therefor in determining its share of the water apportioned in accordance with Article V herein.

ARTICLE XI

The provisions of this Compact shall remain in full force and effect until amended in the same manner as it is required to be ratified to become operative as provided in Article XV.

ARTICLE XII

This Compact may be terminated at any time by unanimous consent of the signatory States, and upon such termination all rights then established hereunder shall continue unimpaired.

ARTICLE XIII

Nothing in this Compact shall be construed to limit or prevent any State from instituting or maintaining any action or proceeding, legal or equitable, in any Federal Court or the United States Supreme Court, for the protection of any right under this Compact or the enforcement of any of its provisions.

ARTICLE XIV

The physical and other conditions characteristic of the Yellowstone River and peculiar to the territory drained and served thereby and to the development thereof, have actuated the signatory States in the consummation of this Compact, and none of them, nor the United States of America by its consent and approval, concedes thereby the establishment of any general principle or precedent with respect to other interstate streams.

ARTICLE XV

This Compact shall become operative when approved by the Legislature of each of the signatory States and consented to and approved by the Congress of the United States.

ARTICLE XVI

Nothing in this Compact shall be deemed:

(a) To impair or affect the sovereignty or jurisdiction of the United States of America in or over the area of waters affected by such compact, any rights or powers of the United States of America, its agencies, or instrumentalities, in and to the use of the waters of the Yellowstone River Basin nor its capacity to acquire rights in and to the use of said waters;

(b) To subject any property of the United States of America, its agencies, or instrumentalities to taxation by any State or subdivision thereof, nor to create an obligation on the part of the United States of America, its agencies, or instrumentalities, by reason of the acquisition, construction, or operation of any property or works of whatsoever kind, to make any payments to any State or political subdivision thereof, State agency, municipality, or entity whatsoever in reimbursement for the loss of taxes;

(c) To subject any property of the United States of America, its agencies, or instrumentalities, to the laws of any State to an extent other than the extent to which these laws would apply without regard to the Compact.

ARTICLE XVII

Should a Court of competent jurisdiction hold any part of this Compact to be contrary to the constitution of any signatory State or of the United States of America, all other severable provisions of this Compact shall continue in full force and effect.

ARTICLE XVIII

No sentence, phrase, or clause in this Compact or in any provision thereof, shall be construed or interpreted to divest any signatory State or any of the agencies or officers of such States of the jurisdiction of the water of each State as apportioned in this Compact.

IN WITNESS WHEREOF, the Commissioners have signed this Compact in quadruplicate original, one of which shall be filed in the archives of the Department of State of the United States of America and shall be deemed the authoritative original, and of which a duly certified copy shall be forwarded to the Governor of each signatory State.

Done at the City of Billings in the State of Montana, this 8th day of December, in the year of our Lord, One Thousand Nine Hundred and Fifty.

Commissioners for the State of Montana:

FRED E. BUCK
A. W. BRADSHAW
H. W. BUNSTON
JOHN HERZOG
JOHN M. JARUSSI
ASHTON JONES
CHRIS. JOSEPHSON
A. WALLACE KINGSBURY

P. F. LEONARD
WALTER M. McLAUGHLIN
DAVE M. MANNING
JOSEPH MUGGLI
CHESTER E. ONSTAD
ED F. PARRIOTT
R. R. RENNE
KEITH W. TROUT

Commissioners for the State of North Dakota:

I. A. ACKER
EINAR H. DAHL

J. J. WALSH

Commissioners for the State of Wyoming:

L. C. BISHOP
EARL T. BOWER
J. HAROLD CASH

N. V. KURTZ
HARRY L. LITTLEFIELD
R. E. McNALLY

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Sue Higgins, 19 April 1984.
Steve Schmitz, 3 May 1984.

Others:

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George Christopolus, Wyoming State Engineer; 26 March 1984.
Tom Dougherty, Director of the Wyoming Wildlife Federation, 26 March 1984.
Tom Dougherty, Committee Chairman of the Wyoming Citizen's Committee for Instream Flows, 26 March 1984.
Warren White, Wyoming Governor's Natural Resources Aide; 26 March 1984
Larry Wolfe, Wyoming Assistant Attorney General; 26 March 1984



Legal Parameters of a
State Controlled Water Market

By: Charles T. Dumars*

Final Copy for Submission to the Select Committee on
Water Marketing of the Montana Legislature and the
Lincoln Land Institute of Land Policy on July 14, 1984.

*Professor of Law, University of New Mexico
Co-director Natural Resources Center

INTRODUCTION

In this paper I begin by relating the impact of the Sporhase and El Paso v. Reynolds cases on New Mexico. I describe New Mexico's response to these legal precedents. In part two I outline the impact of these and other recent decisions on formation of a state controlled water market and in the final section I comment on the steps that may be necessary to assert state control over water resources and raise what I hope are relevant questions.

New Mexico is a state which has followed a system of prior appropriation water law since before statehood. Under this system the first person to divert water for beneficial use obtains an alienable property right in the water diverted. This water law has been further refined to promote maximum beneficial use of water resources by allowing transfers of these rights by sale to others for beneficial use. The New Mexico "public", in effect, has been considered the owner of the water resource in trust for the citizens who could use it so long as it was not wasted or abandoned. If the right is wasted or abandoned, it will be forfeited and made available to another member of the New Mexico public.

Because the New Mexico "public" was considered trustee and sole owner of the resource, only New Mexicans could use the resource. This doctrine was reflected in a statute which prohibited transportation of groundwater for use out-of-state. This concept of exclusive state use of water resources was acknowledged by Congress in legislation which unilaterally approved the

division of surface waters between states and by Congressional approval of interstate compacts which gave exclusive use of surface water to each of the signatory states. The groundwater of a state, however, has rarely been before Congress either as a part of a specific act of Congress authorizing its exclusive use within a state or as part of an interstate compact, except where the groundwater is interrelated with surface water. Based on an early Supreme Court case, however, many legal scholars had concluded that a state's groundwater could be limited to use exclusively within a state.

In Sporhase v. Nebraska,¹ the United States Supreme Court faced the question of whether the federal (commerce clause) interest in the free flow of goods between the states invalidated state statutes like Nebraska's which prohibited the interstate transportation of groundwater unless the receiving state permitted exportation.

The Supreme Court struck down the reciprocity clause of the Nebraska groundwater transportation statute and extended the "commerce clause" principles to groundwater transfers treating water like a "good" sold in interstate commerce. In doing so, however, the Court acknowledged that water in the arid West is different -- arid states need to conserve water for the future. It indicated that federal legislation authorizing states to maintain groundwater stocks within their borders would be an acceptable solution. Likewise, interstate compacts were cited as examples of appropriate means for resolution of this problem. Finally, the Court concluded that water conservation is a legitimate

purpose that could justify a state's prohibition on the exportation of groundwater.

New Mexico's Response to the Federalization of its Water Resources

In 1983, the New Mexico federal district court in El Paso v. Reynolds,² ruled that New Mexico's absolute embargo on groundwater exportation was unconstitutional. It held that the statute was "tantamount to economic protection".³ While acknowledging that states have a legitimate interest in the conservation and optimum utilization of their water supply, an absolute barrier was held to be not narrowly tailored to meet these goals. The District Court naturally relied on Sporhase v. Nebraska. In response to the El Paso decision, New Mexico amended its water appropriation statute and repealed the embargo law. The Federal District Court is now evaluating the constitutionality of the new law.

New Mexico's New Exportation Statute

The anti-exportation statute struck down in El Paso v. Reynolds explicitly banned the out-of-state transport and use of New Mexico groundwater.⁴ The new statute, in contrast, provides that "under appropriate conditions" the interstate transportation and use of New Mexico's public waters are not in conflict with the public welfare of the state's citizens or the conservation of the state's waters.⁵ In referring to "public waters," the new

statute is not limited to groundwater, but also encompasses surface waters.

The statute requires that the person or entity desiring to export water outside of New Mexico shall apply for a permit from the State Engineer approving the withdrawal.⁶ In addition to requiring the State Engineer to publish notice of the permit application,⁷ the statute stipulates that the State Engineer, prior to granting the permit, must find that the withdrawal and transportation of the water outside of the state will not impair existing water rights.⁸ The State Engineer must also find that the proposed export is neither contrary to water conservation policies within the state nor otherwise detrimental to the public welfare of New Mexico's citizens.⁹ In making his decision, the State Engineer shall consider, but is not limited to the following factors:

- 1) the supply of water available to New Mexico;
- 2) water demands of New Mexico;
- 3) whether there are water shortages within new Mexico;
- 4) whether the water that is the subject of the application could feasibly be transported to alleviate water shortages in New Mexico;
- 5) the supply and sources of water available to the applicant in the state where the applicant intends to use the water; and
- 6) the demands placed on the applicant's supply in the state where the applicant intends to use the water.¹⁰

The statute further provides that by filing an application to export New Mexico water, the applicant shall submit to the New Mexico law governing the appropriation and use of the water.¹¹ The State Engineer is empowered to condition the permit to guarantee that the water, going out-of-state, will be used in accordance with the rules and regulations imposed upon in-state users.¹²

In response to the El Paso court's observation that New Mexico law placed no conservation restrictions on in-state groundwater permit applicants,¹³ the New Mexico legislature amended its in-state groundwater withdrawal criteria. Prior to the El Paso decision, the in-state groundwater application statute required the State Engineer to issue a withdrawal permit if he found that unappropriated groundwater was available and that the withdrawal would not impair existing water rights.¹⁴ Following the El Paso ruling, in-state applicants must meet two additional criteria: the appropriation must not be contrary to water conservation within New Mexico or detrimental to the public welfare of the state's citizens.¹⁵

In addition to amending the statute, the New Mexico legislature in Law 1983, Chapter 98 created the "water law study committee" composed of five members appointed by the governor. The Committee was charged with the obligation to "study, examine and evaluate the impact and implications for the water resources available to the state of recent court decisions concerning water and interstate commerce." The legislation stated further that the Committee "shall report to the governor and the legislative

council on or before January 1, 1984, which report shall include recommendations concerning any modifications or amendments to New Mexico water laws."¹⁶

The committee report, when delivered to the legislature started with the premise that the Sporhase case conveys the following message loud and clear: if a state wishes to maintain its groundwater resources, it must establish control by asserting a proprietary interest in those resources. The Committee isolated three constitutionally acceptable methods for asserting this interest. The first method is to have Congress authorize maintenance of water within a state's boundaries. The second method is for New Mexico to negotiate a compact with appropriate sister states and have that compact approved by Congress. The third method (recommended for further study but not immediate implementation) is state appropriation. The committee reasoned that in Sporhase, the Supreme Court ruled that the "public ownership" which states like New Mexico had relied upon as a basis for exclusive use of the water within the state was little more than a "legal fiction." However, actual appropriation by a state of its groundwater would convert the asserted ownership from "legal fiction" to reality and give the state the control necessary to conserve for its future needs.

The need to conserve water for the future is a function of the amount of current and future demand. In light of Sporhase, anticipated demand must be extended to include out-of-state as well as in-state demand. Figure 4.1, taken from report, Chapter IV, graphically portrays deficits in states neighboring New

Mexico. These numbers are taken from each state's most recent water plan. The absence of a comparably large number for Colorado results from the fact that Colorado did not attempt to quantify deficits in most cases, simply noting the large number of municipalities that faced water quantity problems.

The magnitude of these deficits caused the committee to conclude that the economies in these areas face very serious adjustment problems over the next four decades. It is understandable that planners in these states would look for every possible means for mitigating these problems, and, to a large degree, water importation may be the only option available for obtaining anything close to the large quantities of water needed to eliminate these deficits other than by reducing demand.

At a minimum, water shortages of the magnitude indicated will clearly affect the competitive climate for water among western states. Moreover, most of the states contiguous to New Mexico have more highly developed economies with a correspondingly greater ability to overcome legal and economic obstacles to importation. The committee stated: "Prudence dictates that New Mexicans recognize the character of this changing climate related to water deficits in neighboring states and their possible implications for the State of New Mexico. What now is a concern largely confined to areas near borders of sister states may conceivably expand to other areas of the State as water becomes steadily more valuable in neighboring states. The State of New Mexico must take action to respond to this possible expansion."¹⁷ The committee then made the following recommendations:

- 1) The state should make every effort possible to have the Congress of the United States act in some way to allow New Mexico to maintain its water resources within its boundaries.
- 2) The state should enter into compact negotiations with the state of Texas to clarify the division of surface water of the Rio Grande below Elephant Butte Dam and thereby clarify the status of the related groundwater as well. (The El Paso v. Reynolds decision created uncertainty as to the nature of the division of surface waters of the Rio Grande below Elephant Butte Dam. The committee concluded that a compact with Texas would provide the certainty that would be in the interest of both states and would clarify the status of related unappropriated groundwater since surface rights would have to be purchased and retired as the groundwater is pumped.)
- 3) The state should fund immediately a study of the possibility of state appropriation of unappropriated groundwater and investment of the capital necessary to extract and distribute the water. (State appropriation was recommended only for study and not immediate implementation. The recommendation was described as "a means of last resort if neither a federal solution nor an interstate compact could be reached." This recommendation is discussed in more detail later under the subheading Parameters of State Control.)
- 4) The state should act immediately to place a five-year moratorium on the granting of new permits for unappropriated groundwater where there is hydrologic uncertainty, where excessive demand exceeds water supply and where there is confusion regarding the State's allocation of the water. Such a moratorium should not be allowed to affect existing vested water rights, and should allow appropriations for emergencies. The geographic extent of such a moratorium was left to the legislature. (The committee reasoned that before any arid state allocates any underground waters,

it must have good hydrologic information. This information is not yet available in some areas of the state of New Mexico.)

The legislature adopted some of the recommendations of the committee and in 1984 placed a two-year moratorium on virtually all new appropriations of groundwater at or below Elephant Butte Dam and funded a study of possible state appropriation of groundwater. A movement has also taken place to explore the possibility of a compact and federal legislation.

New Mexico's response to the El Paso case raises a number of fascinating federalism questions regarding water. The federal legislation and the compact options are not discussed in this paper. Rather, because the theme of this conference is water markets, I assume the primary interest is in evaluating the legal parameters of a state's right to control its water resources and to market those resources.

Evaluating the Parameters of Reassertion of State Control Over Water.

The commerce clause allocates federal power to Congress to regulate interstate commerce. If a state statute conflicts with a federal statute that concerns interstate commerce, then the federal statute will control. Where no conflict exists, the federal power to regulate commerce still limits action by a state. This limitation, known as the "dormant" commerce clause, requires a state statute regulating interstate commerce to be nondiscriminatory in its treatment of in-state and out-of-state

interests, to further a legitimate state interest, and to not unduly burden interstate commerce.¹⁸

When, however, a state acts not as a market regulator but as a market participant, then the dormant clause limitation does not apply. The dormant commerce clause does not apply because the state, acting as a buyer or seller in the marketplace, does not actually regulate commerce. Instead, a state that buys or sells in the market has rights similar to a private businessman in deciding the who, what, and when of buying and selling.

Accordingly, the United States Supreme Court has held that a state that purchases goods can discriminate in favor of the state's residents. In Hughes v. Alexandria Scrap Corp.,¹⁹ the Court upheld a Maryland statute that facially discriminated against nonresidents. In an attempt to reduce the number of abandoned cars in the state, Maryland has enacted a statute that paid a bounty to state-licensed processors of abandoned cars. Processors whose plants were located outside of Maryland were required by the statute to provide more extensive documentation, which in effect limited the benefits of the bounty program to in-state processors. The Supreme Court held that the dormant commerce clause in no way restricted a state's ability to purchase items from whomever it wanted.

When a state acts as a seller of goods, it is also immune from dormant commerce clause scrutiny. In Reeves, Inc. v. Stake,²⁰ the United States Supreme Court upheld South Dakota's preference statute that authorized a state-owned cement plant to sell only to state residents. In upholding the South Dakota

statute, the Court found that South Dakota fit within the "state as market participant" classification by acting as a private citizen in the manufacture and sale of a product.

In its most recent decision involving a local government acting as a market participant, the Supreme Court held that the mayor of Boston could constitutionally require that all city-funded construction projects be performed by a work force of at least half city residents. White v. Massachusetts.²¹ As a purchaser of construction services, the City of Boston was a market participant.

The question left unanswered by both Reeves, Inc. and White, was whether the "market participant" theory of state exemption from the commerce clause applied to natural resources owned by the state. That issue was answered in this current term of the United States Supreme Court in South Central Timber Development, Inc. v. Esther Wunicke, et. al..²² There, pursuant to an Alaska statute, the state of Alaska published a notice that it would sell timber under a contract, only if there would be "primary manufacturing" of the logs by some private entity in Alaska before they were shipped out of state. A company that shipped logs into foreign commerce without any processing, challenged the law as discriminatory market regulation of the processing business, rather than legitimate market participation in the lumber sale business. On appeal, the United State Supreme Court agreed with the company.

Alaska argued that its statute had been authorized by federal law. The Supreme Court first rejected this argument and then

turned to the commerce clause. The Court pointed out that there were two distinct markets - the timber sales market in which Alaska is a participant and the timber processing market which Alaska does not participate in.

The Court concluded that to indirectly regulate the timber processing market by conditioning timber sales on in-state processing was akin to an illegal restraint on alienation or a violation of the anti-trust laws by imposition of vertical rule restraints. It concluded, "Instead of merely choosing its own trading partners, the state is attempting to govern the private, separate economic relationship of its trading partners; that is, it restricts the post purchase activity of the purchaser, rather than merely the purchasing activity".²³

The exact holding of the full Court is unfortunately somewhat opaque because of the split in opinions of the various justices, but it appears at a minimum that a majority of the court would hold that the state "market participation doctrine" does apply to natural resources and the doctrine allows a state to "...impose burdens on commerce within the market in which it is participant, but allows it to go no further".²⁴ The state "...may not avail itself of the market participant doctrine to immunize its downstream regulation of the timber-processing market in which it is not a participant."²⁵

The relationship of this case to water markets is obvious. It strongly suggests that the state as owner and allocator of water rights can elect to deal with whomever it chooses. However, it cannot use its choice to regulate a secondary downstream

market. If water rights are sold outright, by the state, and the buyer elects to sell those rights to a third person in the private water market, the state may be powerless to stop it. Similarly, if water is leased, and if a figuratively "downstream" market for sub-leases is allowed to exist, then, the state cannot condition its initial leases on the leasee's promise to sub-lease in any way that discriminates against commerce.

Montana's "market participation" in water matters is limited to the initial distribution of the water. If it is an outright sale, its power may end at preferring Montana residents over others. If Montana chooses to sell to a person from Colorado, management may be beyond Montana's jurisdiction. Likewise, if Montana issues a lease, it must choose to have all leases revert to the state after a term of years. If, however, it allows any sub-lease market to be created, then it cannot regulate that sub-lease market, in which Montana is not a participant, in a manner that discriminates against commerce.

The Role of Planning in Sustaining a Position of State Ownership in Water Marketing.

At first brush it would appear obvious that the unappropriated water in a state is the property of that state. However, Sporhase v. Nebraska,²⁶ and Colorado v. New Mexico, II²⁷ raise serious doubts about this proposition. Indeed, Sporhase, squarely held that public ownership of the unappropriated water in Nebraska was a "legal fiction" and El Paso v. Reynolds,²⁸ followed Sporhase. This is true, even though the constitutions of

these two states proclaim the water to be a public good. Colorado v. New Mexico, II, adds support to the proposition that the mere geographic fact that water originates within a state is almost irrelevant to the issue of state ownership. The Court in Colorado v. New Mexico, II "rejected the notion that the mere fact that the Vermejo River originates in Colorado automatically entitles Colorado to a share of the river's waters." And stated later, "... The source of the Vermejo River's waters should be essentially irrelevant to the adjudication of these sovereigns' competing claims."²⁹

The issue then, is how can states reassert their sovereignty over water resources within their boundaries? Merely passage of a statute that says, "It's ours and we really mean it this time" will not get the job done. As noted above, in New Mexico, we have begun a study of precisely this question. Although it has scarcely begun, two things seem clear: (1) the state will have to expend its own capital to develop its water resources as South Dakota did with cement in Reeves v. Stake, as a part of the water resources market and (2) where water is not currently needed, but will be marketed in the future, states will have to engage in long-range planning to use it within the state to its maximum and to market it as a part of same state plan. This point was also made clear in Colorado v. New Mexico, II.

"Colorado objects that speculation about the benefits of future uses is inevitable and that water will not be put to its best use if the expenditures necessary to development and operation must be made without assurance of future supplies. We agree, of course, that asking for absolute precision in forecasts about the benefits and harms of a diversion would be unrealistic. But we have not asked for such precision. We have only

required that a State proposing a diversion conceive and implement some type of long-range planning and analysis of the diversion it proposes. Long-range planning and analysis will, we believe, reduce the uncertainties with which equitable apportionment judgments are made (emphasis added)."³⁰

Colorado failed to gain even a drop of water from a river within its borders in this equitable apportionment action, because it had not, at a minimum, acted to study the future uses and water conservation measures available to it. "It may be impracticable to ask the state proposing a diversion to provide unerring proof of future uses and consistent conservation measures that would be taken. But it would be irresponsible of us to apportion water to uses that have not been, at a minimum, carefully studied and objectively evaluated..."³¹

How much capital expenditure is necessary? How much study? How much flexibility will a state have even if its ownership of water is deemed more than a "legal fiction". These are questions that demand answers. The Yellowstone Compact Cases will be watched carefully by all. I am confident that as between compacting states, congressional approval of a compact reserves a quantity of water for each compacting state. However, it is in no way clear that this precedent bears any relationship to related groundwater in storage that can be taken without impacting on the surface water. Nor, is it clear what the implications would be on a buyer from a non-compacting state that buys water for use in his own state from a willing seller.

In terms of the overall need for present state action to control future water resource allocations, it should also not be forgotten that by simple amendment of the Desert Lands Act of

1877, Congress could appropriate all of the unappropriated water on the public domain to future federal uses or could elect to allocate it on a lease basis similar to coal or natural gas. This is not to say this outcome is likely, but only to remind us of the power of the federal government to appropriate water on the public domain.

I realize I have not given "pat" answers to the questions I have raised, because, as of yet, there are none. Hopefully through exchanges of ideas in conferences such as this one, these answers will emerge.

FOOTNOTES

1. 458 U.S. 941 (1982).
2. 563 F. Supp. 379 (D.N.M. 1983) For an excellent description of the facts and issues in this case see Comment, New Mexico's Water Exportation Statute; Will it Float? Natural Resource Journal. (To be published July 1984).
3. 563 F. Supp. at 390.
4. N.M. Stat. Ann. §72-12-19 (1978).
5. N.M. Stat. Ann §72-12-(B)-1 (Cum. Supp. 1983).
6. Id. at 72-12(B)-1(B) (Cum. Supp. 1983).
7. Id.
8. Id. at 72-12(B)-1(C) (Cum. Supp. 1983).
9. Id.
10. Id. at 72-12(B)-1(D).
11. Id. at 72-12(B)-1(E).
12. Id. at 72-12(B)-1(F).
13. N.M. Stat. Ann. §72-12-3 (1978).
14. N.M. Stat. Ann §72-12-3(E) (1978).
15. N.M. Stat. Ann. §72-12-3(E) Cum. Supp. (1978). As to surface waters, however, the "public interest" has always been a criterion for appropriation.
16. Laws of New Mexico, 1983 Chapter 98.
17. See, Report to Governor Toney Anaya and the Legislative Council, The Impact of Recent Court Decisions Concerning Water and Interstate Commerce on Water Resources of the State of New Mexico. Chapter IV, p. 5.
18. Pike v. Bruce Church, 397 U.S. 137 (1970).
19. 426 U.S. 794 (1976).
20. 447 U.S. 429 (1980).

21. 103 S. Ct. 1042 (1983).
22. 52 U.S.L.W. 4631 (May 22, 1984).
23. 52 U.S.L.W. 4635.
24. Id.
25. Id.
26. Id. Note 1.
27. Colorado v. New Mexico, et. al., (original equitable apportionment action decided by United States Supreme Court, June 4, 1984).
28. Id. Note 2.
29. Colorado v. New Mexico, (Slip opinion at 12).
30. Colorado v. New Mexico, (Slip opinion at 11).
31. Colorado v. New Mexico, (Slip opinion at 9).

OPTIONS FOR CONTROLLING EXPORTS OF WATER
IN LIGHT OF SPORHASE v. NEBRASKA

By: Karl J. Englund

To be presented to the Select Committee on Water
Marketing of the Montana Legislature and the
Lincoln Land Institute of Land Policy

July 13 and 14, 1984
Billings, Montana

I have been asked to give a "Montana perspective" to Professor Charles Dumars' paper concerning the legal parameters of a state controlled water market. Professor Dumars relates the experience of the State of New Mexico in responding to federal court decisions holding unconstitutional New Mexico's absolute embargo on ground water exportation. New Mexico's response contains ideas directly applicable to Montana. However, before we alter our existing water law, we must understand basic Montana law. It is with an eye toward Montana constitutional and common law that I address the excellent paper by Professor Dumars.

We start from the proposition that the United States Supreme Court has looked with disfavor upon absolute bans of the exportation of ground water. While there are some important differences between ground and surface water, we can assume for the purposes of this discussion that the Supreme Court will treat surface water and ground water the same. However, the line of cases to which we are responding, starting with City of Altus v. Carr¹ and continuing through Sporhase v. Nebraska² and El Paso v. Reynolds³ involve only ground water. The differences between ground and surface water may provide an argument why these two distinct resources should be treated differently. As I said, I will assume for the sake of discussion that these decisions affecting ground water will apply to surface water. The Select Committee on Water Marketing, on the other hand, should take a very careful look at this assumption before making any recommendations for change in our basic water law.

New Mexico responded to El Paso by passing a statute

providing that any person desiring to appropriate ground water must receive a permit from the New Mexico State Engineer. Prior to granting such a permit, the State Engineer must find the withdrawal and transportation of water do not impair existing water rights and the withdrawal is neither contrary to water conservation policies nor otherwise detrimental to the public welfare of the citizens of the State of New Mexico. In other words, New Mexico eliminated its export ban, replacing it with a permit system grounded in its authority to protect the public health and welfare. In addition, New Mexico put in place a two year moratorium on the withdrawal of ground water from an area of the State where the extent of the State's rights is uncertain. Finally, with an eye toward a more permanent solution, New Mexico will encourage Congress to pass a law granting it authority to control the water within its boundaries and will enter into compact negotiations with neighboring states.

New Mexico's new permit system appears, on its face, to pass constitutional muster. As the United States Supreme Court held in Sporhase: "Obviously, a State that imposes severe withdrawal and use restrictions on its own citizens is not discriminating against interstate commerce when it seeks to prevent the uncontrolled transfer of water out of the State."⁴

Professor Dumars did not address the federal legislative and the compacting options. I will address them very briefly. Montana's experience with federal legislation designed to limit the extent of our coal severance tax should make us very wary of putting all of our faith in the hands of Congress. Any attempt

to exercise complete control over the waters of the State, particularly if coupled with an attempt to get top dollar for the sale of water, will certainly meet with strong reaction from the members of Congress.

Compacting, on the other hand, is perhaps the best way to resolve conflicts between neighboring states and has been approved of by the United States Supreme Court.⁵ However, compacting takes time and the results of negotiations may become moot by the time the compact is reached. This should not discourage Montana from proceeding to negotiations with our neighboring states. However, we should have alternatives to compacting available in the interim.

So, I argue that federal legislation is the wrong approach and while compacting is preferable, the time involved may make this approach infeasible. That leaves us the question that I am to address: How can we limit the export of water in light of the recent federal court decisions?

I submit we have taken several of the necessary steps and we need only moderate change in our water law to have a workable system in full compliance with the dictates of the federal constitution.

The steps that we have taken are as follows:

1. Although late, we have begun the process of determining how much water is available for future use by determining the extent of existing water rights. As I understand it, this process of quantifying existing rights should be completed by 1990;

2. Recognizing that quantifying federal and Indian reserve

water rights by resort to the courts is an expensive and time consuming process, we have established the Reserve Water Rights Compact Commission to negotiate the nature and extent of these reserve rights; and,

3. We have passed a temporary law providing special criteria for the issuance of permits to appropriate 10,000 acre feet per year. In addition, only the legislature has the authority to approve permits for the consumptive use of 10,000 acre feet per year of water.

In addition to making these changes in our basic water law, we have the following principles of basic Montana law which must be followed:

1. All citizens of the State of Montana have "the right to a⁶ clean and healthful environment";

2. The State of Montana and each person has a duty to maintain and improve a clean and healthful environment for⁷ present and future generations;

3. All surface, underground, flood and atmospheric water within the boundaries of the state are the property of the State⁸ for the use of its people; and,

4. The public has a right to recreational use of the surface of the state's water. Our constitution and the public trust doctrine do not permit a private party to interfere with⁹ the public's right to recreational use of those waters.

We can combine all of these provisions of state statute and the dictates of basic law and conclude that we have special criteria for the issuance of a permit to appropriate 10,000 acre

feet of water per year. In addition, only the legislature can permit the appropriation for consumptive use of 10,000 acre feet per year. In exercising these elements of state control, the Montana Department of Natural Resources and Conservation and the legislature must protect prior appropriators and must duly exercise their obligations under the constitution and the public trust doctrine to protect the rights of all citizens to clean and healthful rivers.

This system protects the water resources of the state in a nondiscriminatory manner. However, in order for it to be permanent, and in order to insure full compliance with our basic law, we should make the following changes in Montana law:

1. Our existing statute on large appropriations should be made permanent and made applicable to changes in use of water;
2. Language effectuating the constitutional provisions to a clean and healthful environment and the public trust doctrine must be incorporated into the water law statute itself insuring that these principles are not forgotten in the day-to-day operation of the Montana Department of Natural Resources and Conservation;
3. The work of the Reserve Water Rights Compact Commission should continue; and
4. Until we know the nature and extent of existing water rights, there should be a moratorium on all large appropriations from river drainages where existing rights, including in-stream reservations, potentially exceed supply in critical water years.

Such a system is in full accord with Sporhase, its progeny and basic Montana law. It would regulate large

appropriations evenhandedly to effectuate legitimate local public interest. Its effects on interstate commerce are only incidental and any effects on interstate commerce are not excessive in relation to local benefits. In addition, it would ensure compliance with basic Montana law by placing the dictates of that law within the statute where it cannot be overlooked by the legislature and the administrative agencies. This is an important point. My experience with effectuating Montana's policy of environmental protection is that administrative agencies, busy and over-worked, pay particular attention to the statute and sometimes overlook the basic law upon which the statute is grounded.

The moratorium period allows us the time and the information upon which to base comprehensive water development plans, the importance of which are fully discusses in Professor Dumars' paper. It may also allow us the time in which to exercise the compacting option.

Legislative review of large appropriations is not just good law, it is good public policy. Large appropriations, be they for in-state use or for out-of-state use, have the capacity to disrupt our system of prior appropriation and cause the most environmental damage. This is especially true of large appropriations involving consumptive uses. Therefore, providing special criteria for large diversions is appropriate and providing that only the legislature can approve consumptive uses keeps that important determination in the hands of the elected representatives of the people of the State, who, according to the

public trust doctrine, have a legitimate interest the health of our water systems.

FOOTNOTES

1. 225 F.Supp. 828 (W.D. Tex.) summarily aff'd, 385 U.S. 35 (1966)
2. 563 F.Supp. 379 (N.M., 1983)
3. 458 U.S. 941 (1982)
4. Id. at 955, 956
5. Colorado v. Kansas, 320 U.S. 383 (1942)
6. Montana Constitution, Art. II, Section 3
7. Montana Constitution, Art. IX, Section 1 (1)
8. Montana Constitution, Art. IX, Section 3 (3)
9. Montana Coalition for Stream Access, Inc. v. Curran, _____ Mont. _____, _____ P.2d _____, 41 St. Rptr. 906 (1984)



**THE PUBLIC TRUST CHAUTAUQUA COMES TO TOWN:
IMPLICATIONS FOR MONTANA'S WATER FUTURE**

A paper presented by

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to a

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**THE PUBLIC TRUST CHAUTAUQUA COMES TO TOWN:
IMPLICATIONS FOR MONTANA'S WATER FUTURE**

Montanans have lived for many years with uncertainties in their water rights system caused by varying and often sweeping assertions of Indian, federal reserved, 1/ and federal "nonreserved" 2/ water rights. Their water policy has also been heavily influenced by the massive federal presence on the Missouri River in the form of several reservoirs on the mainstem. For these reasons, the debut of the public trust doctrine (made famous in Chicago and California) in two recent decisions of the Montana Supreme Court 3/ is bound to receive suspicious if not critical reviews. Yet, while the recognition of the doctrine may "muddy" Montana water law over the near term (especially as it pertains to potential intra- and interstate diversions, the doctrine actually invites and supports a stronger state government role in the development of a water policy which will provide a balance between traditional and important evolving uses, between present and future generations, and between the needs of Montana and the needs of other states in the region.

The first part of this paper presents a primer of the origin and apparent direction of the public trust doctrine. The second part of the paper discusses in more length some of the important features of the doctrine. The third portion of the paper explores some of the ramifications the doctrine may have for the various policy options being considered in this seminar. The paper closes with a general discussion of the implications the doctrine has for state government as it makes decisions concerning important "common heritage" resources.

I. Evolution and Scope of the Public Trust Doctrine

A. Civil and common law roots

The public trust is a longstanding doctrine having its roots in both civil and common law. The doctrine requires a high level of care (in essence, a fiduciary obligation) by government as it deals with the resources of "common heritage" or of "special character" within its jurisdiction. Historically, the doctrine has been applied to protect public uses and access to and upon navigable waters for passage, commerce, and fishery. These roots, however important in understanding the origin and development of the doctrine, should not mislead policymakers as to how the essential purpose of the principle may be applied in contemporary situations. Although the doctrine evolved with reference to navigable waters and to economic and subsistence uses, the rationale behind the doctrine may equally apply to other natural resources and to guard more contemporary uses. 4/

The Institutes of Justinian, in restating Roman law, provides the civil law origins of the doctrine: "By the law of nature these things are common to man -- the air, running water, the sea and consequently the shores of the sea." 5/ As one author has indicated:

All rivers and ports were public, and the right of fishing was common to all men. Any person was at liberty to use the seashore to the highest tide, to build a cottage or retreat on it or to dry his nets on it, so long as he did not interfere with use of the sea or beach by others. Although the banks of a river were subject to private ownership, all persons had the right to bring vessels to the river, to fasten to them by ropes and to place any part of their cargo there. 6/

The same principles were recognized in early English law; but, because the common law abhors owner-less things, the common property notions of the Roman law had to be adapted to this new situation. A solution was found, however, in attributing ownership to the King -- thus, "all things which relate peculiarly to the public good cannot be given over or transferred . . . to another person, or separated from the Crown." 7/

B. Early American applications

Applications of public trust considerations in America have been made since the early days of the colonies. Massachusetts' "great pond" ordinance of 1641 guaranteed the right to fish and fowl in the ponds of ten acres or more, as well as with access through private property to enjoy that right. In its passage of the Northwest Ordinance of 1787 (which applied to the territory including Montana), Congress guaranteed that "the navigable waters leading into the Mississippi and St. Lawrence, and the carrying places between the same, shall be common highways, and forever free" 8/ The New Jersey Supreme Court, in 1821, recognized that the states had succeeded to the rights of the British Crown in publicly important waters and that

[T]he sovereign power itself . . . cannot, consistently with the principles of the law of nature and the constitution of a well ordered society, make a direct and absolute grant of the waters of the state, divesting all the citizens of their common rights. 9/

An important public trust case of the nineteenth century eventually reached the U.S. Supreme Court (Illinois Central Railroad v. Illinois). 10/ In 1869, the Illinois legislature granted to the Illinois Central Railroad 1,000 acres of tide and submerged land, representing virtually Chicago's entire waterfront. The railroad was only limited in that it could not obstruct the harbor or impair the public's right of navigation. Also, the legislature retained the right to regulate wharfage fees when docks were built.

Thinking better of the transaction, the legislature later rescinded the grant; and the legality of the rescission (with nothing more than incidental compensation) was upheld by the U.S. Supreme Court in 1892. The Court declared that one legislature does not have the power to "give away nor sell the discretion of its successor" to "exercise the powers of the State" in the execution of the trust and that legislation "which may be needed one day for the harbor may be different from the legislation that may be required at another

day." The Court did recognize, however, that some parcels on the waterfront could be granted free of the public trust as long as they furthered trust purposes.

Other applications of public trust considerations have been made in Massachusetts litigation to invalidate excessive delegations of authority to a private company to develop and operate a state park and ski area; 11/ in Wisconsin cases to invalidate legislation which had authorized a private developer to drain a lake for housing development and to deny local government power to use a fishing stream for incompatible electric power generation; 12/ in a Pennsylvania ruling that, where destruction of a public resource is justified because of an overriding public purpose, there should be reasonable efforts of mitigation; 13/ in North Dakota where a court prevented the issuance of water appropriation permits for coal generation facilities until a comprehensive water use plan was completed taking into account instream uses such as navigation, commerce, and fishing; 14/ in a New Jersey Supreme Court decision recognizing the public's ancillary rights of both reasonable access to and use of privately-owned portions of beach areas to enjoy tidelands; 15/ and in a 1984 decision of the Idaho Supreme Court recognizing the public trust doctrine in that state but upholding a grant by the state lands department of a lease to a private club for the construction of a private docking facility on a navigable lake (on the basis that a fee simple interest was not being conveyed). 16/

C. Mono Lake litigation

The California Supreme Court's decision in National Audubon Society v. Superior Court, 17/ however, is the most sweeping declaration of public trust considerations. The case, decided in February 1983, signals an important integration of the public trust doctrine with the prior appropriation doctrine applied in California, Montana, and other Western states.

The facts of Mono Lake are the water history of Los Angeles itself. In 1913, Los Angeles completed its first aqueduct from the Owens Valley to the east and eventually dried up Owens Lake. In 1933, the city applied for and in 1940 received, a state permit to divert unappropriated waters in four the five tributary streams serving Mono Lake lying east of Yosemite. The state agency knew environmental damage would occur from granting the water permit, but the agency believed that it had no authority to prevent or minimize that damage. For the next 20 years, however, Los Angeles made little of these waters.

In the early 1960's, the state warned Los Angeles that its Mono Lake right would have to be put to use or would be lost. By 1970, Los Angeles completed a second aqueduct to the Owens Valley enabling it to take its full Mono Lake entitlement. The result has been that, in the last ten years, the surface of the lake has diminished by about 30 percent and the surface level has dropped approximately 40 feet. The brine shrimp of the lake, upon which numerous bird species depend, has been threatened by increased salinity. The birds, including a large breeding colony of California gulls, have also lost safe habitat as a once-protected island has become connected with the main shore. Air quality has deteriorated as alkaline flats become exposed to the wind.

In its February 1983 decision, the California Supreme Court held that the public trust doctrine does apply in this case so as to protect the navigable waters of Mono Lake from harm caused by diversion of non-navigable tributaries. The doctrine protects changing public needs for ecological preservation, open space maintenance, and scenic and wildlife needs — as well as the traditional concerns of navigation, commerce, and fishing. The state, as public trustee, has a continuing duty to protect the people's common heritage of streams and lakes through continuing administration of the trust — including possible revocation of existing rights without compensation.

Thus, read broadly, water rights California's appropriation system cannot be acquired independently of the public trust. Water rights are never vested; they can and should be reconsidered on a public interest basis. At least in California, courts have concurrent jurisdiction with administrative agencies to make these determinations although courts should defer to agency expertise whenever possible. In Mono Lake's case, the Court directed that some responsible agency review the merit of Los Angeles' diversions.

D. The Curran and Hildreth decisions of the Montana Supreme Court

The Montana Supreme Court has recently reached two decisions recognizing the public trust doctrine in Montana law. In both Montana Coalition for Stream Access v. Curran (Dearborn River) 18/ and Montana Coalition for Stream Access v. Hildreth (Beaverhead River), 19/ the Court held that the public is entitled to recreational use of all of Montana's waters that are capable of such use. The limit of the public's right to use these waters is, under normal circumstances, the high water mark. The public may cross private property in order to portage around barriers in the water, but the portage must be accomplished in the least intrusive manner.

The court's holding is based on Article IX, Section 3 of the Montana Constitution ("All . . . waters . . . of the state are the property of the state for the use of its people") and the public trust doctrine. But, Montana judicial recognition of the public interest in the state's streams and rivers predates the 1972 Constitution. 20/ It is surprising that the Curran court did not base its holding in part on the Northwest Ordinance of 1787 guaranteeing that "the navigable waters leading into the Mississippi . . . shall be common highways, and forever free" 21/

In both recent decisions, the Court has carefully and explicitly pointed out that its recognition of the public trust doctrine does not thereby grant public access over private

property to reach state-owned waters used for recreational purposes. This position runs counter to the general trend of public trust cases to allow such reasonable access.

E. Groundwater: future extension of the public trust doctrine?

While at first blush it might appear that the public trust doctrine has no application to groundwater, one author argues that there are two reasons such coverage might eventually occur. In the Mono Lake case, the court applied public trust criteria to the diversions from non-navigable tributaries because of the resulting effect on the navigable lake. Similarly, the pumping of tributary groundwater 22/ may adversely affect navigable waterways. Second, the "common heritage" rationale may apply to important aquifers in their own right; and public trust protection would be afforded without reference to a navigability requirement.

II. Important Components of the Public Trust Doctrine

From our discussion thus far of the public trust doctrine, numerous features of the doctrine have been mentioned. Before proceeding to an examination of the implications of the doctrine for Montana's water policy, it is necessary to focus on the important core features of the concept.

A. Legal basis: constitutional, statutory, or other?

The public trust does not neatly fit as a common law, constitutional, or statutory doctrine. As one author has indicated, "the public trust appears to be an expression of the inherent prerogative of the sovereign to restrict or reallocate property rights to protect the integrity of the 'special' or 'common heritage' natural resource." 23/ As such, the doctrine may be extra-constitutional in that "neither a statute nor a constitutional provision can authorize the granting of property rights 'vested' so as to protect them

from reexamination." 24/ But, while a legislature may be unable to restrict or limit the public trust, legislators are free to enact measures, such as scenic or in-place protection statutes, to more specifically assert or characterize the right.

B. Requirement of navigability

As previously mentioned, the public trust doctrine has been linked from its origins to navigable waters. Although various tests ("log-floating," "pleasure boating") have been applied by courts as a prerequisite to public trust protection, recent holdings, such as Curran and Mono Lake seem to indicate that navigability is simply an indicator for a more important and basic concern: is the resource invested with major public importance? If so, the courts appear ready to strain in applying public trust protection even though the linkage to navigability might be tenuous. It would not be surprising to see the navigability requirement dropped entirely by the courts in favor of a more accurate and focused examination of the extent of public's interest in continued use of a resource.

C. Is the public trust a navigation servitude, an easement, or a riparian right?

Public trust considerations are often applied by courts under different nomenclature such as "easement," "navigation servitude," "riparian right," or other terms. In most cases, these concepts act toward the same end, i.e., protection of public uses; and the public trust doctrine can be considered the general, encompassing category. There are, however, some distinctions. For instance, a navigation servitude, when it exists, imposes a dominant easement on navigable water beds without regard to the source or intervening chain of title as to those lands. Also, riparian rights are recognized only in three Western states (California, Oregon, and Washington). For our purposes in this paper, the concepts are interchangeable to the extent they recognize public interest in a resource.

D. Relationship of the public trust doctrine to the prior appropriation system

Several commentators 25/ see Mono Lake as an important benchmark in the development of Western water law. From the gold rush to the post-war years, the appropriation doctrine reigned supreme and indispensable to the development of the West. Appropriators were generally limited only by the rights of more senior holders.

We now witness the integration of public trust considerations with the appropriation system. In this phase, "the police power [of the state] has overtaken, controlled and constrained the prior appropriation doctrine, authorizing and now directing a reallocation of resources to consider public, non-proprietary concerns." 26/

E. Prospective or retroactive application?

The public trust is both a prospective and retroactive doctrine. While it is important that future water appropriations be screened and conditioned on public interest criteria, many states are already incorporating such criteria into their permit procedures. Also, application of the doctrine to future appropriations does not disrupt settled expectations or existing water uses.

F. What can or must a state do?

A state as trustee has "an affirmative duty . . . to protect public trust uses whenever feasible." 27/ In a state that recognizes the doctrine, its agencies, courts, or both have the ability to reexamine and modify (usually without compensation) existing water uses. Especially in tidelands cases, it is probably rare that a court would countenance a transfer of public rights free of the trust and then only if the transfer furthers public trust purposes. If Mono Lake is a guide, courts may be more lenient in inland water cases. As indicated in that case, the

prosperity and habitability of much of this state requires the diversion of great quantities of water from its streams for purposes unconnected to any navigation, commerce, fishing, recreation, or ecological use relating to the source stream. The state must have the power to grant nonvested usufructory rights to appropriate water even if diversions harm public trust uses. 28/

When transfers out of trust occur in inland water cases, the court will apply a decision checklist to the transaction which may include the following considerations:

1. Has the decisionmaking been broad-based and explicit?
That is, has an important case been made for the transfer or development? Has the legislative body been explicit (thus knowledgeable) about what is giving up?
2. Related to the first, has there been comprehensive planning for or consideration of important in-place or instream uses of commerce, navigation, recreation, and ecological protection?
3. If the transfer or development has been properly allowed, will there be sufficient mitigation?

When a court is able to consider the full range of factors that must be evaluated (including the opportunity costs to the parties), then the court may on its own determine whether public trust resources have been properly committed to private or specialized public uses. If judicial consideration of the range of factors is not possible, a court is likely (as in the Mono Lake decision) to enjoin the appropriation or to mandate public trust scrutiny by a legislative or other body, which has the capacity to discover and consider all relevant factors.

III. Public Trust Implications for a State's Water Policy

Committee members are, of course, most concerned as to how the public trust doctrine relates to their task of evaluating the merits of water marketing proposals, out-of-state diversions, and Montana water policy generally. The first part of this section discusses the possible constraints the doctrine places on state decisionmakers as they consider diversions (whether in- or out-of-state) for coal slurry or similar industrial purposes. The second part of this section discusses the considerations the doctrine holds for each of the major public policy options being presented at this seminar: free market, state marketing, state permit system, and interstate allocation.

A. Implications of the public trust doctrine for water marketing programs

This committee has been empaneled to "study the desirability and feasibility of in-state and out-of-state marketing of limited amounts of water for industrial purposes." The public trust considerations for such marketing are different depending on (1) whether the marketing is of currently appropriated or unappropriated waters; (2) the type of diversion; and (3) who does the diversion.

1. Unappropriated or appropriated waters

If currently unappropriated waters are slated for sale and diversion, the public trust doctrine has prospective application requiring that existing public uses in the waters be protected. If waters are being used for navigation or recreational purposes, if fragile ecological systems depend on the present flow or location of the water, or if the flow is low or unstable, only minimal diversions will be tolerated under the doctrine. The use of proceeds from the water sales may be a consideration that will convince a court to allow significant interference with public rights. If proceeds from the sale are invested back into the resource (e.g., recreational facilities elsewhere, wildlife habitat protection)

or dedicated to a permanent "heritage" trust fund (e.g., the Montana permanent coal severance tax fund), a court would be more likely to countenance diversions that will interfere with existing public rights. In the case of all such prospective diversions, however, a state has the opportunity to legislatively fashion the relevant and important public interest criteria into its permit or appropriation scheme.

The sale and diversion of existing appropriated rights usually involve change of use applications processed through the requisite state administrative agency. Typically, such change of use applications have been approved as long as they have not caused injury to other users. The public trust doctrine requires that the agency evaluate the application in view of public uses as well as the uses of other appropriators. Also, the doctrine imposes an affirmative obligation on the agency to review existing appropriations for interference with public trust purposes and to modify or rescind an appropriation or change of use when it becomes destructive to public uses. Again, this is an area where a legislature has an opportunity to refine public interest criteria and procedure.

2. The type of diversion

The type of diversion facility used for a water marketing program is also important in calculating the public trust considerations. If a reservoir is built on the main stream to capture water for sale and diversion, the construction might interfere with fish and wildlife habitat; free navigation including rafting, canoeing, and fishing; and other public uses. Reductions in downstream flows might be sufficient to satisfy existing appropriated rights but could damage similar downstream public uses.

Offstream storage for marketing and diversion purposes would seem to fare better under public trust scrutiny. While sufficient water must be left in the stream for public purposes, the possible destruction of public uses and natural values by submersion is removed.

3. Who does the diversion?

In a state that recognizes the doctrine, public trust scrutiny applies to an attempted or existing diversion from publicly-important streams or lakes by individual, state, or local appropriators. The difficulty arises, however, when the diversion is proposed or has been accomplished by a federal agency or by an Indian tribe in exercise of their reserved water rights. Even when permit applications and adjudications involving federal rights take place in a state forum, the public trust doctrine must generally yield to federal law under the supremacy clause. Some federal statutes, however, allow state law to control federal diversions. For example, Section 8 of the Reclamation Act 29/ allows state law to govern diversions by the Bureau of Reclamation unless "inconsistent with clear congressional directives." 30/ In this instance, a state-recognized public trust doctrine could conceivably apply to condition or limit certain federal diversions.

B. Implications of the public trust doctrine for water policy options

As part of the committee's investigation, broader water policy options are being considered. For instance, should water be allocated through a water market, through a state regulatory system, or through a state marketing system? Also, should the state seek an interstate allocation of Missouri River water? The public trust doctrine may have implications for these policy alternatives as well.

1. Free market

Proponents of water marketing systems advocate the exchange of water rights by private individuals who are generally unrestricted as to what purpose the water might be used for, where it is to be used, and to whom it might be leased or sold.

Pertaining to publicly-important waters, the public trust doctrine could be used to prevent the "privatizing" of the resource; to void the title, perhaps even without compen-

sation, of a private holder; or, at least, to condition private uses so that they will not interfere with public uses.

2. State regulatory system

As previously mentioned, the public trust doctrine imposes on a state a continuing duty to review proposed and existing uses of publicly-important waters for the protection of those public uses. In a water system regulated by a state agency, public interest criteria based on case law, statute, and agency rule would be expected to be used in reviewing permit applications and existing uses.

3. State controlled market

A state cannot escape public trust scrutiny when it acts to appropriate certain waters for its own use or for the transfer (at the present or in the future) to private parties. A state controlled market would, however, give the state greater ability to fashion the uses of its waters by deciding to whom rights will be transferred.

4. Interstate allocation

There is the possibility of an interstate allocation of Missouri River waters through an equitable apportionment action before the U.S. Supreme Court, by Congress, or through interstate compact. While Montana is in a favorable upstream position, questions still arise: if Montana needs or reserves certain waters to secure public trust purposes (usually instream), will that use or reservation be recognized or honored in an apportionment of Montana's share of Missouri waters? If subsequent changes in the public interest allow the diversion of water out of the stream bed, thereby reducing downstream flows upon which others rely, who has interstate priority of use? If down-

stream states recognize the public trust doctrine, can Montana appropriate and put to consumptive use waters necessary to serve those downstream public uses?

There are no easy answers to these questions. If interstate apportionment comes about through congressional action or interstate compact, recognition for Montana's public trust needs will depend in large part on political leverage and how convincing the state is in articulating the needs as integral to Montana's water policy. If interstate apportionment is attempted through Supreme Court litigation, however, the situation is more uncertain. The U.S. Supreme Court has ruled that the principles of prior appropriation apply in an interstate equitable apportionment action. Thus, it is possible that Montana's public trust waters would not receive Supreme Court acknowledgment as against appropriations by downstream states.

IV. Conclusion: Implications for State Decisionmaking

While the public trust doctrine had its origins in navigable waters and commercial or subsistence uses, it is becoming clear that the concept is being recognized for its more fundamental importance. The author most identified with the concept, Joseph Sax, puts it this way:

The central idea of the public trust is preventing the destabilizing disappointment of expectations held in common but without formal recognition such as title. The function of the public trust as a legal doctrine is to protect such public expectations against destabilizing changes, just as we protect conventional private property from such changes. So conceived, the trust doctrine would serve not only to embrace a much wider range of things than private ownership, but would also make clear that the legal system is pursuing a substantive goal identical to that for the management of natural resources. Concepts like renewability and sustained yield, so familiar to us in fisheries and forest management, are designed precisely to prevent the sort of sudden decline in stocks that is destabilizing and crisis-provoking. 31/

FOOTNOTES

- 1/ Indian and other federal reserved rights are recognized by the courts as over-arching rights to the water necessary to serve the primary purposes of a federal land reservation — be it an Indian reservation, a park, or a national forest. They generally have early priority dates and unsettled scope. See *Winters v. United States*, 207 U.S. 564 (1908) and *United States v. New Mexico*, 238 U.S. 696 (1978).
- 2/ "Nonreserved" federal water rights refer to a now discredited claim by some federal agencies to the additional waters necessary to fulfill the subsidiary or evolving mission of the agency. Strongly asserted during the Carter Administration, the doctrine was withdrawn by the Department of Interior in September 1981 and finally put to rest Administration-wide in a legal memorandum issued by Theodore Olson, then-Assistant U.S. Attorney General for Legal Counsel.
- 3/ *Montana Coalition for Stream Access v. Curran*, No. 83-164 (Mont., May 15, 1984); *Montana Coalition for Stream Access v. Hildreth*, No. 83-174 (Mont., Jun. 21, 1984).
- 4/ See, e.g., C.F. Wilkinson, "The Public Trust Doctrine in Public Land Law," 14 U.C. DAVIS L. REV. 269 (1980).
- 5/ THE INSTITUTES OF JUSTINIAN 2.1.1 (T. Cooper, trans. & ed. 1841).
- 6/ J. Stevens, "The Public Trust: A Sovereign's Ancient Prerogative Becomes the People's Environmental Right," 14 U.C. DAVIS L. REV. 195, 197 (1980).
- 7/ 2 H. BRACON, ON THE LAWS AND CUSTOMS OF ENGLAND 16-17 (S. Thorne trans. 1980).
- 8/ Ch. 8, 1 Stat. 50 (1789).
- 9/ 6 N.J.L. 1, 78 (1821).
- 10/ 146 U.S. 387 (1892).
- 11/ *Gould v. Greylock Reservation Comm'n*, 350 Mass. 410, 215 N.E. 2d 114 (1966).
- 12/ *Priewe v. Wisconsin State Land & Improvement Co.*, 93 Wis. 534, 67 N.W. 918 (1896).
- 13/ *Payne v. Kassab*, 11 Pa. Commonw. Ct. 14, 312 A.2d 86 (1973), aff'd, 468 Pa. 226, 361 A.2d 263 (1976).
- 14/ *United Plainsmen Ass'n v. North Dakota State Water Cons. Comm'n*, 247 N.W. 2d 457 (N.D. 1976).
- 15/ *Matthews v. Bay Head Improvement Ass'n*, No. A-104, slip op. (N.J. Feb. 2, 1984).
- 16/ *Kootenai Environmental Alliance v. Panhandle Yacht Club*, No. 13390, slip op. (Idaho 1984).

- 17/ 33 Cal. 3d 419, ___ Cal. Rptr. ___, ___ P.2d ___ (Feb. 1983).
- 18/ No. 83-164, slip op. (Mont. May 15, 1984).
- 19/ No. 83-174, slip op. (Mont. Jun. 21, 1984).
- 20/ E.g., *Paradise Rainbows v. Fish & Game Comm'n*, 148 Mont. 412, 421 P.2d 717 (1966) (public's right to have sufficient water left in stream for protection of trout).
- 21/ Ch. 8, 1 Stat. 50 (1789).
- 22/ I.e., hydrogeologically interrelated with surface streams.
- 23/ H. Dunning, "The Mono Lake Decision: Protecting a Common Heritage Resource from Death by Diversion," 13 ENVTL. L. REV. 10144, 10147 (May 1984). The doctrine "expresses an inherent aspect of sovereignty, and thus is in some ways beyond modification by the legislature. *Id.* at 10146.
- 24/ *Id.* at 10148.
- 25/ H. Dunning, *supra* n. 23, at 10148-10149; A. Rossman, "Public Trust in Appropriated Waters: California Supreme Court Decides Mono Lake Case," WESTERN NATURAL RESOURCE LITIGATION DIGEST 13 (Spring 1983).
- 26/ A. Rossman, *supra* n. 25, at 18.
- 27/ 33 Cal. 3d at 446, 658 P.2d at 728, 189 Cal. Rptr. at 365.
- 28/ *Id.* at 426, 658 P.2d at 712, 189 Cal. Rptr. at 349.
- 29/ 43 U.S.C. 383 (1976).
- 30/ *California v. United States*, 438 U.S. at 672 (1983).
- 31/ J. Sax, "Liberating the Public Trust Doctrine from Its Historical Shackles," 14 U.C. DAVIS L. REV. 185 (1980).

" . . . THE DOCTRINE IS OUT THERE AWAITING RECOGNITION."

MONTANA WATERWAYS, THE MONTANA SUPREME COURT
AND THE PUBLIC TRUST DOCTRINE

A paper presented to the
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of the
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Decisions of the Montana Supreme Court handed down May 15 and June 21, 1984, rely on the public trust doctrine and the Montana Constitution of 1972 in holding that "any surface waters that are capable of recreational use may be so used by the public without regard to streambed ownership or navigability for nonrecreational purposes." In each instance, the Supreme Court affirmed District Court decisions which had held that the public has a right to use river waters and streambeds up to the high water mark because the waters were navigable for recreation purposes. There are distinctions in the waterways, in the District Court holdings, and in the Supreme Court decisions, and those distinctions are summarized here.

I. Montana Coalition for Stream Access v. Curran

A. District Court, First Judicial District: Curran

In Montana Coalition for Stream Access v. Curran¹, the First Judicial District Court found statutory grounds for recreationists' access to the Dearborn River in three sections of the Montana Code Annotated: 87-2-305 (declaring navigable rivers, sloughs and streams to be public waters for the purpose of angling), 85-1-112 (all rivers and streams which are navigable in fact are navigable) and 85-1-111 (navigable waters and all streams of sufficient capacity to transport the products of the country are public ways for the purposes of navigation and such transportation). The Court found as a matter of fact that the Dearborn was navigable for recreation purposes, and stated that the practical rule should be:

A Montana stream is navigable and accessible for recreational purposes over so much of its entire course as is navigable by recreation craft at any given time. Over the length of such course, the stream may be utilized between ordinary high water levels by aquatic recreationists without interference from riparian proprietors. Once recreational navigability is established, access is not limited to water craft. The angler may wade between the high water lines, and if there is adequate dry footage below such lines the hiker may walk.

The Dearborn River was also found to be navigable for title purposes according to the federal commercial use test because at the time of statehood, the river had been used for moving logs and railroad ties downstream. Consequently, under well-established doctrine, the bed of the river had belonged to the State of Montana since 1889². In a subsequent section of the opinion, the District Court re-emphasized reliance on statutes, and declined to find state constitutional grounds for recreational access to the Dearborn or other waters of the state. The District Court approvingly cited the Montana Supreme Court's 1925 decision in Herrin v. Sutherland³ that ". . . the public have no right to fish in a non-navigable body of water, the bed of which is owned privately." It is to be noted, however, that having determined navigability on the basis of recreational use, the reach of Herrin v. Sutherland had been sharply limited.

B. The Montana Supreme Court: Curran

On appeal, the Montana Supreme Court affirmed the District Court's application of the federal test of navigability for title, and consistently with the District Court, drew a sharp line between the federal law tests for navigability for title and state law tests for navigability based on public recreational use. Unlike the District Court, the Supreme Court found the bases for its decision in the public trust doctrine and in the

1972 Montana Constitution. The Court drew its explanation of the public trust doctrine from principal United States Supreme Court decisions relating to the transfer of navigable waters and the soils under them from the federal government to the states at the time of statehood. Central to those cases is the proposition that during the territorial period, the waters and streambeds of navigable waterways were held in trust for the future states to be "dealt with for the public benefit" by the states after their admission to the Union. Although the Court pairs the public trust doctrine with the equal-footing doctrine as considerations in determining navigability-for-title questions, it does not confine its treatment of the public trust doctrine to waters found navigable under the federal trust. The development of the Court's broader application of the public trust doctrine encompasses recognition of the increased tendency for states to find navigability for recreational use as well as for commercial navigation and the substitution of an inquiry as to whether water is susceptible to public use for earlier inquiries into navigability and title to streambeds.

At this point the Montana Supreme Court set forth the language of Section 3 (3), Article IX of the 1972 Montana Constitution:

All surface, underground, flood, and atmospheric waters within the boundaries of the state are the property of the state for the use of its people and are subject to appropriation for beneficial uses as provided by law.

As for rights on the Dearborn, the Supreme Court found that Curran had no right of ownership to the riverbed or surface waters because ownership was held by the federal government prior to statehood in trust for the people, and title was transferred to the state upon statehood "burdened by this public trust." Under the Montana Constitution, Curran had no right to

control the use of the surface waters of the Dearborn to the exclusion of the public "except to the extent of his prior appropriation of part of the water for irrigation purposes."

Looking beyond the Dearborn situation, the Court stated:

In essence, the question is whether the waters owned by the State under the Constitution are susceptible to recreational use by the public. The capability of use of the waters for recreational purposes determines their availability for recreational use by the public. Streambed ownership by a private party is irrelevant. If the waters are owned by the State and held in trust for the people by the State, no private party may bar the use of those waters by the people. The Constitution and the public trust doctrine do not permit a private party to interfere with the public's right to recreational use of the surface of the State's waters. (Emphasis added.)

To the Montana Supreme Court in the spring of 1984, the portion of the 1925 Herrin v. Sutherland decision prohibiting fishing in waters over a streambed in private ownership appeared to have no application in Curran. It was dismissed as irrelevant and contrary to the public trust doctrine and the 1972 Montana Constitution.

Drawing on both statutes and caselaw, the Court held that the public has a right to use state-owned waters to the point of the high water mark. In case of obstructions in the water, the public was to be allowed to portage around the barriers in the least intrusive way possible. Despite the breadth of the declaration of public rights in the state's waters, the Court's order states unequivocally that the public does not have the right to enter into or trespass across private property in order to enjoy the recreational use of state-owned waters.

II. Montana Coalition for Stream Access v. Hildreth

A. District Court, Fifth Judicial District: Hildreth

The Montana Supreme Court addressed similar issues in Montana Coalition for Stream Access v. Hildreth⁴. The case arose from the conflicting views of Hildreth and recreationists as to floating rights on a stretch of the Beaverhead River running through his property. After hearing evidence of the extensive use of the Beaverhead for recreational purposes (fishing, floating, hunting), and for contemporary commercial uses (outfitters and trappers), the Fifth Judicial District Court found the Beaverhead to be navigable under both a pleasure-boat test and a commercial activity test. Therefore the District Court concluded that members of the public have the right to use the waters and banks of the Beaverhead up to the ordinary high water mark, free from interference, and also the right to portage around any obstacle in the least intrusive manner.

B. The Montana Supreme Court: Hildreth

Hildreth appealed and the Montana Supreme Court affirmed the result of the lower Court's decision while significantly modifying the Court's conclusions of law. Drawing from the Curran decision, the Supreme Court emphasized that "the capability of use of the waters for recreational purposes determines whether the water can be so used." There are no limitations in the Montana Constitutional provision that the state owns the water for the benefit of its people. The only possible limitation of use must arise from the characteristics of the waters themselves. No owner of property adjacent to state-owned water has the right to control the use of those waters as they flow through his property. The pleasure-boat test is not adopted in Montana as it is "unnecessary and improper to determine a specific test under which to find navigability for recreational use." Neither was there a need for the Fifth Judicial District Court to employ a

commercial use test, as that federal test is used to determine navigability for title purposes, and not navigability for use. Also carried forward from Curran is a clear enunciation of the public's right to use the water and the bed and banks of the Beaverhead up to the ordinary high water mark and the right of portage around barriers in a manner that will avoid damage to the adjacent landowner's property. Again, too, the Supreme Court declared that the public had no right to enter upon or cross over private property to reach state-owned water held available for recreational purposes.

As part of his appeal, Hildreth contended that the District court should have determined title to the streambed of the Beaverhead, ^{as it ran through his property} which he asserted belonged to him. The Supreme Court dismissed the contention, drawing again from Curran to re-emphasize that the question of title to the underlying streambed is immaterial in determining navigability for recreational use of state-owned waters. There is also consistency with Curran in the Court's restatement of the holding that "under the Public Trust Doctrine and the 1972 Montana Constitution, any surface waters that are capable of recreational use may be so used by the public without regard to streambed ownership or navigability for nonrecreational purposes."

In Curran, the Montana Supreme Court dismissed a contention that property was being taken without compensation because the Court found that Curran had no claims to the waters of the Dearborn, and hence there could be no taking. In Hildreth, a similar claim was dismissed because rights of public use of the waters of the Beaverhead had been determined, not title.

III. Summary

In Curran and Hildreth, the Montana Supreme Court has added Montana to the roster of states recognizing broad public recreational rights to the use of state waters, without regard to findings of navigability and without regard for private ownership of streambeds. In reaching the two decisions, the Montana Supreme Court has relied on the 1972 Montana Constitution's declaration that all waters within the boundaries of the state are the property of the state for the use of its people and on the public trust doctrine. The Montana Court thus has tied the public trust doctrine to the state's fundamental law, and made it applicable to all waters in the state capable of recreational use. Thus a doctrine, which has been linked traditionally to streambeds and to waters declared to be navigable under the federal test for title determination, must henceforth be considered when questions of public rights in Montana's waters arise, and in actions taken by the state affecting Montana waters, including water marketing.

The historical development of the public trust doctrine has produced guidelines for the range of the state's power to protect the public interest and the exercise of state powers over waters held in public trust.

As for the reach of state powers to protect the public interest under the public trust doctrine, an early United States Supreme Court decision held that the state "may forbid all such acts as would render the public right less valuable, or destroy it altogether."⁵ The landmark United States Supreme Court decision in Illinois Central Railroad v. Illinois provided:

. . . the control of the state for the purposes of the trust can never be lost, except as to such parcels as are used in promoting the interests of the public therein, or can be disposed of without any substantial impairment of the public interest in the lands and water remaining. . .⁶

It is clear that in applying the public trust doctrine to state surface waters capable of recreational use, the Montana Supreme Court has set the stage for both legislative deliberations and additional judicial decisions on issues addressed by the California Supreme Court in National Audubon Society v. Superior Court of Alpine County⁷, including taking the public trust into account in the planning and allocation of water resources, and reconsidering allocation decisions on the basis of their effect on the public trust. Montana had already traveled a great distance in its statutory protections for streambeds and the water and fishery resources. In these matters, the effect of Curran and Hildreth is to link common law doctrine to the Montana Constitution as support for the actions of the legislature.

Footnotes

1. No. 83-164 (Mont. May 15, 1984). Plaintiffs in addition to the Montana Coalition for Stream Access were the Montana Department of Fish, Wildlife and Parks and the Montana Department of State Lands. Amicus Curiae briefs were filed by Professor Albert Stone of the University of Montana School of Law, the National Wildlife Federation and the Montana Wildlife Federation, the Montana Stockgrowers Association, and the Montana Council of Trout Unlimited. Chief Justice Haswell delivered the opinion of the Court, joined by Justices Harrison, Shea, Morrison, Sheehy and Weber. Justice Gulbrandson dissented.

2. Under federal law, each state acquired title to the bed and banks of navigable streams up to the high-water mark upon admission to the Union. While under Section 70-1-202, Montana Code Annotated, state ownership is asserted of all land below the water of a navigable stream, under Section 70-16-201, Montana--as a matter of state law--only owns the bed between low water marks, and the adjacent landowner owns the strip of land between high and low water marks.

3. 74 Mont. 587, 596, 241 Pac. 328 (1925).

4. No. 83-174 (Mont. June 21, 1984). In answering the complaint filed by the Montana Coalition for Stream Access, Hildreth filed a third-party complaint against the State of Montana, the Montana Department of State Lands, and the Montana Department of Fish, Wildlife and Parks. Amicus Curiae briefs were filed by Professor Albert Stone of the University of Montana School of Law, the National Wildlife Association and the Montana Wildlife Association, the Montana Council of Trout Unlimited, the Montana Farm Bureau Federation and the Wyoming Farm Bureau Federation, the Montana Stockgrowers Association and the Montana Woolgrowers Association. Chief Justice Haswell delivered the opinion of the Court, joined by Justices Shea, Weber, Morrison, and Sheehy. Justices Gulbrandson and Harrison dissented.

5. Smith v. Maryland, 18 How. 71,75 (1855).

6. Illinois Central Railroad Company v. Illinois, 146 U.S. 387, 453 (1892).

7. National Audubon Society v. Superior Court of Alpine County, 658 P.2d 709 (Cal. 1983).

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Biographical Statement

Margery H. Brown is associate dean and professor, University of Montana School of Law. She holds an M.A. degree in history and a J.D. degree from the University of Montana. From 1964-68, she studied in the history doctoral program at the University of Montana and then served on the two preparatory commissions for the Montana Constitutional Convention of 1972. Her teaching fields are Indian Law and Public Land Law.





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ELEMENTS OF A WATER MARKETING PROGRAM

July, 1984
Billings, Montana

Submitted to:
Environmental Quality Council
Legislative Branch
State Capitol
Helena, Montana 59620

Submitted by:
ECO Northwest, Ltd.
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ELEMENTS OF A WATER MARKETING PROGRAM

INTRODUCTION

The sale of any commodity must naturally involve at least two parties--a willing buyer and a willing seller. In the water market, there are presently no buyers. There are also no sellers with undisputed claim to either the water itself or the right to sell the use of the water for any purpose.

There is no true water market in Montana today because there is no true market demand. The Montana situation is unlike many other areas in the West where municipal growth is very rapid, the value of agriculture production much higher, and the relative storage capacity lower. That is not to say that there are no demands on Montana water, but rather that these demands are often nonmarket in nature. Buying and selling water, however, is different than buying and selling shoes, automobiles, or wheat. In those private market transactions, buyers and sellers cooperate to each other's advantage. There is no dispute over ownership whereas there is clear dispute over the ownership of Montana water.

Storage capacity has generally developed as a public good, defined as that type of good that would typically not be produced within the private market system because of the enormous expense involved. Fort Peck and Yellowtail dams provide two good examples. While obtaining the benefits of

private goods is predicated upon purchase, the benefits from public goods accrue to society from their very existence. In the case of a pure public good, no one's satisfaction is supposed to be diminished by the satisfaction gained by others, and it is not possible to appropriate a public good for an individual's personal use, as is the case with ordinary goods. Theoretically, perfect competition in the private market leads to underproduction and underconsumption of public goods. In other words, the private market would not have developed the mainstem reservoir system and the resultant flood control and recreational benefits associated with those projects. These benefits cannot be sold to private buyers which leads to what economists call the free-rider problem. The recipients act rationally and will understate the value of the benefits knowing full well that they will obtain it "free" even though it is certainly not free. On other occasions, those who benefit will deliberately overstate the value of these nonmarket elements (irrigation, recreation, fish and wildlife, water quality, etc.) in order to get new projects built, but built at considerable public expense. And yet in other situations, there are groups who believe that they are adversely impacted by such projects and attempt to stop development using fundamentally the same tactics as those who would see new projects built.

In the private market these sorts of complications do not exist; that is, there is cooperation and mutual benefit.

Those benefits, of course, do not explicitly include nonmarket considerations. Additionally, the total level of benefits is restricted by the expense which cannot be borne by individual buyers. In the public market, however, there is no need for buyer cooperation as long as the seller (the public) assumes the cost. Just as pure competition will lead to an under-allocation of public goods, realistically public regulation without cost constraints will result in the opposite misallocation. As a result, any reasonable allocation of water, which has both private and public attributes, should be made on the basis of a reasonable mix of public and private decision rules.

THE PROBLEM WITH WATER

The concern over water use in Montana is rather straightforward; farmers and ranchers are afraid of losing their water to industrial developments which could pay nearly any price. Since energy development must have a firm water supply, the water debate is narrowed to sales from state and federal projects. At the present time, however, there are no industrial buyers nor are there likely to be any in the future. The only possibility appears to be synfuel development which is at best a long-shot. Farmers and ranchers still have a legitimate concern since the oil picture could change over night and either the state or federal government could find themselves in a situation with no alternative but to sell to

industry. The demand for energy becomes the focal point of debate.

ENERGY DEMAND

The demand for industrial water is almost exclusively tied to the demand for coal which is fundamentally linked to the demand for electricity. Coal has very little use but to be burned and those processes require cooling water. Coal slurry also requires water.

Starting in the mid 1960s, energy companies began to view western coal development prospects as a source of tremendous profit potential. During that period, electrical load growth throughout most of the nation averaged five to seven percent per year, a doubling of demand every ten to 15 years. Today, the projected rate of growth is approximately 1.5 to 2.5 percent.

The assumed rate of growth for electrical loads greatly affects the forecasted amount of Montana coal to be mined. John Duffield et al. (Northern Great Plains Coal Demand Study, 1982) estimated that a one percent difference in annual load growth results in a 40+ percent difference in Northern Great Plains (Montana, Wyoming, North Dakota) coal production by the year 2000. Furthermore, over the past decade Montana's prime market area (the Midwest) experienced population growth

approximately one-half of the national norm. Given the industrial composition of that region, it is probable that overall load growth will be less than the national norm in the future.

Another determinant of the market for Montana coal is federal and state policy governing the amount of sulfur dioxide which coal-fired power plants can release into the atmosphere. In 1971, Congress amended the Clean Air Act to set New Source Performance Standards which allowed 1.2 pounds of sulfur dioxide to be emitted for every million BTUs of coal burned by a plant. Some of the low sulfur coal mined in Montana and Wyoming could be burned without using flue gas desulfurizers (or scrubbers) and meet the standards. Because it is less expensive for some plants to install coal blending facilities to burn low sulfur coal than to retrofit existing plants with scrubbers, demand for low sulfur Montana coal increased from seven million tons in 1971 to nearly 33 million tons by 1979. In 1978, more stringent emission standards called Revised New Source Performance Standards (RNSPS) were established. Because even low sulfur coals required some scrubbing under the RNSPS, demand for Montana coal declined. Pollution control legislation helps to explain why Montana coal production has been stagnant for the past five years.

Coal mined in the Northern Great Plains (NGP) region increased from 15 million tons as late as 1976 to 96 million tons in 1979. This amount represented 50 percent of the

incremental increase in coal production for the entire United States. In spite of this increase, the market for NGP coal is presently soft with little improvement likely for the next 10 years. Because expected increases in the amount of marketable NGP coal did not materialize, industry overcapacity in Wyoming exceeds 50 million tons and is approximately 25 million tons in Montana.

Presumably Wyoming could compete formidably with Montana if unanticipated increases developed in market demand for NGP coal. Wyoming may be better able to satisfy demands because of 1) higher idle production capacity, 2) the possibility of substituting Wyoming coal for Montana coal due to common British Thermal Unit (BTU) and low sulfur characteristics, and 3) a lower delivered price of Wyoming coal particularly if rail competition develops between the Chicago and Northwestern/Union Pacific railroads, and the Burlington Northern (BN). This hypothesis appears to be borne out by the recent Northern States Power purchase of Wyoming coal from the Rochelle Mine (Coal Week, April, 1984) for use in Minnesota. In the past, Minnesota would definitely have been within Montana's market area and not Wyoming's.

Consistently, the old forecasts were too high. For example, Montana coal demand projections made by the Montana Department of Natural Resources and Conservation (DNRC) in 1976 were calling for 325 million tons by 2000, a level which is probably over three times what the actual level will

be. During that period eastern Montana was bracing for an expected economic/demographic shock wave from potentially dozens of generation facilities, synfuel plants, and slurry lines. Most analysts were projecting explosive energy/economic growth. If this had not been the case, the current prohibitions against industrial water use, the Montana Facility Siting Act, and Coal Severance Tax would not have been enacted to control such growth.

Some reasons why the forecasts were too high are that both corporate and public analysts assumed that oil prices would continue to increase and remain high relative to other prices, that air quality regulations would continue to favor western coal, that the demand for electricity would continue to grow at historical rates, and that price increases in the cost of electricity would not affect the level of demand.

Estimates of electrical load growth (and hence coal and water demand) ignored the effects of increases in the cost of providing that energy. High rates of inflation resulting from an expansive federal monetary policy and falling productivity during the 1970s drove up the costs of both plant construction and borrowing. As a result, the cost of providing energy increased. This increase in the price of energy had a pronounced effect on consumer demand and, therefore, the rate of load growth.

As a result of most energy planner's insensitivity toward these price effects, many utilities (both public and

private) developed capacity well beyond realized demand levels. By 1980, it became apparent to most utilities and Public Service Commissions that excess capacity existed beyond reasonable levels. Utilities began to postpone construction and regulatory agencies began to seriously question rate basing new capacity. All of these events sharply reduced the demand for coal and water.

THE SLURRY ISSUE

Coal and transportation currently account for about 35 percent of the annual cost of generating electricity in a new plant. The delivered cost of fuel to existing plants constitutes a considerably higher proportion of annualized costs because debt service is less for older plants constructed when interest rates and construction costs both were lower. Fuel and transportation costs in a Midwestern plant constructed ten years ago may be as high as 50 percent of annual generation costs (i.e., 25 percent coal and 25 percent transportation expense). This fact emphasizes the significance of transportation costs to future growth in Montana's coal production. High Montana rail rates will diminish Montana's potential market which is not strong to begin with.

While the BN has excess capacity and can probably underbid slurry lines, if the BN continues to increase rail rates at or near the pace of the past few years, then slurry pipelines will become an increasing competitive threat.

Although the pro forma rate of return on equity for slurry lines seems generally attractive (i.e., low 20s range), there is a great deal of risk associated with large scale energy projects. Default of the nuclear utility bonds issued by the Washington Public Power Supply System, the failure of the Northern Tier Pipeline and the synfuel program, and potential rate base problems with Colstrip Units 3 and 4 will weigh heavily on the investor's mind.

The largest single obstacle to slurry development rests in the comparatively recent shift from short- to long-term rail contracts. Within the past five years, the duration of the average rail contract has increased from a few years to nearly 20 years. These contracts cannot be broken, so the BN has in effect cornered the existing coal transportation market regardless of slurry costs. This long-term commitment implies that the success of slurry is limited to new coal demand. The demand for new coal from Montana is not likely to increase by more than 30 million tons by 1990, an amount of coal which could be moved by one pipeline. This new tonnage could also be moved by existing BN rail capacity.

A second fundamental constraint facing the development of a slurry line is sales timing. A project has to operate at nearly full capacity for both engineering and financial reasons. New power plants are generally sized at about 350 MW, (energy) and would require about 1.8 million tons of coal per

unit per year. This requirement implies that a slurry line carrying between 20 to 30 million tons per year would serve at the minimum between 11 and 17 typical power plants or two to three energy complexes the size of Colstrip. The problem is that it is very unlikely to find that many old plants which are switching to Montana coal on a new contract, or that much capacity under construction all at the same time. Railroads can add to capacity as needed. A slurry operation has to build and sell all capacity at one time.

Eminent domain is a problem for coal slurry pipelines, which must be built across several states and must comply with different state laws. Although a federal eminent domain law would facilitate slurry construction and help reduce pipeline costs, it is not an absolute necessity as long as the pipeline company can obtain easements from all landowners along its route. The potential problem that a pipeline faces is not being able to get easements from one or more landowners no matter what price is offered. Without the power to condemn right-of-way, constructing a slurry line is more costly, time consuming, and may be impossible in some states.

The water required to transport all new export coal through the year 2000 could not exceed ten percent of current unallocated storage within the coal producing region of Montana. Some individuals, however, do not believe water availability presents a problem for slurry development. They suggest the use of oil or distillates as a transport medium,

but either would be extremely expensive--several hundred times the cost of water. The use of such mediums would probably not be financially viable unless the facility were designed as a joint coal/oil pipeline where oil transport was a primary source of revenue.

Based on what appears to be limited demand for Montana coal, excess rail capacity, and a variety of marketing problems for potential slurry, it is my opinion that there will be no slurry lines operating in Montana for at least a decade. If such a line is developed it is even less likely that Montana water would be used in light of public opinion and probable complications with the Yellowstone Compact. Furthermore, in view of the recent ETSI decision (Nebraska District Court, May 3, 1984), it is possible that no federal water will be used, essentially precluding slurry pipelines altogether.

OTHER ENERGY DEMAND

Rail and slurry lines are not the only means of transporting power. In the Montana experience with energy development (Colstrip Units 3 and 4 Environmental Impact Statement) much, if not most, of the debate focused on the need for power within Montana as opposed to that in the region served by the Bonneville Power Administration (BPA) grid in Oregon, Idaho, and Washington. The plants were built, but several issues have not been resolved, including one which is important to the potential demand for industrial water sales

within Montana. That issue is: can an out-of-state utility build a plant in Montana to export the power and comply with the "need" criterion required by the Major Facility Siting Act?

This issue, while unresolved, will be remembered by both actual participants as well as other utilities within the region. Interviews with two major out-of-state utilities which participated in Colstrip Units 3 and 4 indicate that those companies would never consider Montana as a site for additional generation even though they estimated energy costs via long distance transmission to be five to seven mills less than local generation with embodied rail transportation costs. Minemouth generation and long distance transmission, therefore, may be far less expensive over time than either rail or slurry costs. Moreover, if utilities' perceptions of siting difficulties are correct, Montana's realized coal market and resultant water use could be less than expected versus other states such as Wyoming and North Dakota. If siting coal-fired power plants in Montana to export electricity is possible and attractive to utilities, both coal and water use could increase. If the state faced a trade-off between siting generation plants in Montana or encouraging the use of slurry to lower long-term delivered costs of coal, water use could become an important consideration. It takes significantly less water to transport via slurry than to burn an equivalent amount of coal in a plant. Steam generation requires two to four times more water than slurry.

The development of additional coal-fired units in Montana within the next 15 years is unlikely. Furthermore, synfuel development within the Montana market area does not appear to be a realistic development prospect. The synfuel possibility should, nevertheless, be the most worrisome to farmers and ranchers since a true energy shortage could involve "fast track" joint federal/private developments using federal water regardless of Montana impacts. National priorities would supercede those of Montana's. Federal programs would use federal water, with limited litigation delay. It is, of course, impossible to determine the probability of such an event.

During the next decade, industrial water demand in the Montana market area is expected to be minimal or nonexistent. Agricultural water demand is also expected to be low.

AGRICULTURAL DEMAND

Between 1970 and 1975, there was a significant increase (16 percent) in the number of harvested irrigated acres in Montana. The early 1970s, however, were good grain and cattle years. Since 1975, the number of irrigated areas has remained essentially constant, averaging approximately 1.7 million acres or about 19 percent of the total acres in production. The value of irrigated crop production is usually about 30 percent of the total Montana production value versus 50 to 90 percent

in other western states. This difference probably reflects the fact that the value of crop production (on an acre basis) is generally higher in other areas of the west than in Montana.

Agriculture is far and away Montana's biggest water user. The DNRC estimates that agriculture uses approximately 82 percent of water consumed in Montana versus 17 percent for reservoir evaporation, one percent for municipal and rural domestic use, and less than one percent by industry.

ABILITY TO PAY

The core of the water debate in Montana can be expressed as one basic question...to what extent do Montanans want water to flow to its highest economic use? If the recent Montana Futures survey (Department of Sociology, University of Montana, 1984) is any indication, most Montanans rank agricultural, residential, and recreational uses well above industrial use. Additionally, this survey indicates that Montanans believe (by a 2 to 1 margin) that Montana should not sell water to other states.

If an actual market existed for stored water in Montana, and if these rights were freely transferable, water would move to its highest economic use, the exact reverse of the ranking found in the Montana Futures survey.

Although it is difficult to precisely measure the full value of water to agriculture, the Montana studies that the author is aware of, place that value between \$20 to \$50 per

acre foot (AF); the average value is approximately \$35 per AF. That figure, however, includes operator profit. Most current water users (state projects) pay less than \$10 per AF. In view of past, current, and probable future farm profitability, it is my opinion very few farmers and ranchers would be able to pay over \$15 per AF for water.

Cities and towns can afford more than agriculture since municipal water is a necessity. Water could be argued to be a necessity for agriculture too; however, the municipal situation is different in the sense that cities and towns can simply increase taxes (or fees) to pay for new projects. The cost of new wells will typically fall in the \$50 to \$100 per AF range. Piping and pumping costs may double or triple that value. Therefore, a \$200 AF figure is probably reasonable for comparison with agriculture.

The price that industrial users will pay varies between technologies. Deep, high volume well costs will average \$200 per AF. Wells, however, are not likely to be a viable alternative to stored water because of potential water quality or ground water depletion problems. If industry were to move large volumes of water (+20,000 AF) from, for example, Yellowtail to the coal producing area (Decker), distribution costs would be approximately \$500 per AF. A price above \$1,000 to \$1,500 per AF would probably result in a change in cooling technology for an electrical generation facility (i.e., the process would use less water). Little is known about how

much a synfuel plant would pay; nevertheless, we do know that slurry developers will pay dearly. The ETSI contract with South Dakota suggests a range of values (\$200 to \$500 per AF) plus distribution costs which may be as high as \$2,500 per AF. For comparison, a recent study conducted for the DNRC indicates that the water costs (at \$500 per AF) for a large slurry pipeline (36M tons) would be approximately two percent of total costs. Furthermore, profitability does not seem to be significantly affected by water price.

COST OF NEW WATER

It is fortunate that Montana has the luxury of dealing with comparatively large amounts of unappropriated water. Unfortunately, the State of Montana owns approximately 15 facilities which by federal standards are considered to be unsafe. Additionally, the state is liable for damages. It is estimated that it will cost between \$300 to \$500 million to repair these projects. On an annualized basis, project costs will typically run \$50 per AF for rehabilitation and between \$150 and \$300 for new storage capacity. Agriculture obviously cannot afford these rates. Without industrial or municipal sales, these new projects are generally infeasible. If there were a market, however, industrial sales could help rebuild these projects.

As a result of increased construction costs and rising interest rates, the cost of new storage has probably tripled if

not quadrupled within the last decade. Many of the newer projects are heavily subsidized. The games played by economists and engineers in building up benefit/cost ratios with nonmarket benefits have become notorious. While those intangible benefits (recreation, water quality, irrigation, and flood control) are important, there comes a time when the real prices of these projects should be considered. Both the taxpayer backlash and impact of unproductive investment on the private market have to be realized, particularly when there is no shortage of water.

CONCLUSIONS AND RECOMMENDATIONS

The water crisis which was expected to occur this decade has not taken place, nor will it. Those old projections (300,000 to 600,000 AF) of sales did have an influence on Montana's ability to market water; the state's ability is simply banned, even though no market exists.

Before industrial markets do develop, this deadlock should be broken. This will be difficult given the number of parties and issues involved...farmers, ranchers, industry, environmental concerns, multiple states, the Tribes, and the list goes on. If this deadlock can be broken, the following tendencies and guidelines may be of some value in setting water policy.

- 1) Since the issue focuses on stored water and since nearly all storage is public, private markets, while appealing, may have limited relevance.

- 2) We are dealing with only two sellers operating as spatial monopolies. Montana farmers and ranchers, even in a surplus situation, have a legitimate concern over what these monopolies might do.
- 3) The historical ability of agriculture to purchase from the state or federal government should be maintained in perpetuity. Purchases beyond the current level should not be subsidized.
- 4) The state should establish reasonable minimum reservoir levels to ensure that the noncommodity value of water is maintained, before industrial sales can take place.
- 5) The state should establish the level of potential industrial sales out of each state and federal project.
- 6) Since the authority of the state to sell industrial water is questionable, the state may wish to consider taxing industrial water use which is less questionable.
- 7) Tax proceeds, if any, could be used to help rehabilitate unsafe projects.
- 8) Given the high cost of new capacity, and the inability to pay for such capacity, it would be very unwise to build projects until there is real demand.

These suggestions will not be well received by individuals who are against state water marketing on philosophical grounds (e.g., reduce coal growth by eliminating slurry). The mere existence or potential of a slurry line is not tantamount to an increase in the coal industry. Montana, however, should definitely not ignore the fact that nearly 20 percent of the statewide growth during the 1970s resulted from coal mining and related activity.

Slurry lines may never be built and do not have to use Montana water even if they were built. Synfuel development and future electrical generation projects would use Montana water. While there is clearly no electrical shortage, the oil market could change next week. Flexibility should be built into any state water program which would allow such change to occur without losing control. Fast-track private development of industrial storage or federal sales would probably not maintain the type of control that most Montanans apparently want to see.

BIOGRAPHICAL STATEMENT
BRUCE W. FINNIE

Bruce W. Finnie is a partner in ECO Northwest Ltd., a regional economic consulting firm with offices in Helena, Portland, and Eugene. Since joining ECO in 1981, his work has focused on electrical load forecasting, mining impacts, financial feasibility simulation analysis and market research. With regard to energy and water analysis, recent or current clients include: Montana Office of the Regional Power Planning Council, Montana Department of Natural Resources and Conservation, Montana Consumer Counsel, HKM Engineering Associates, Northern Lights Inc., and Northern Plains Resource Council.

Bruce graduated from Augustana College (Sioux Falls, South Dakota) in May, 1970, receiving a B.S. in Economics. In July 1975, he received a Ph.D. in the same field from the University of Nebraska at Lincoln. During graduate school Bruce worked part-time as an economist with the Nebraska Department of Economic Development.

From August 1975 through June 1977, Bruce was employed by the Montana Department of Community Affairs which is now known as the Department of Commerce. He was responsible for the preparation of the Governor's Economic Report and for the development of various employment and population forecasting systems which were used by state agencies for planning purposes such as revenue/budget estimation and for determining the economic and demographic impacts of industrial developments.

In July 1977, Dr. Finnie was employed by the Governor's Office of Budget and Program Planning where he was responsible for analyzing and projecting agency budgets and revenues. In May 1978, he was promoted to Administrative Officer within the Governor's Office of Commerce where he was primarily involved in developing state economic development strategy, analyzing natural resource issues, and recommending appropriate resolutions to such issues.

In November 1978, Dr. Finnie left state government to form an economic consulting firm called Western Analysis. During the following three years he was responsible for analyzing the economic impacts of major developments within Montana, projections of employment and population, and for a variety of reports/analyses for state and federal agencies, private firms, and organizations. In August of 1981, Bruce sold his interest in Western Analysis, and became a partner in ECO Northwest.

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CONFLICT OR COOPERATION: THE CASE FOR WATER MARKETS

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ABSTRACT

It is becoming increasingly clear that the governmental efforts to allocate water contribute to the potential for a water crisis. The policies have kept water prices artificially low and have tried to meet growing demands by increasing the supply. If such policies continue into the twenty-first century, a water crisis is inevitable. The alternative is to rely more on markets. This paper will examine how markets have been and can be relied upon to improve the allocation of surface water. The key is to remove restrictions on private ownership. With well-defined, enforced, and tradeable property rights, a market can handle most allocation problems.

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INTRODUCTION

Rising demands and dwindling supplies for any goods, services or inputs in the absence of markets tend to generate political conflict. This is certainly true in the case of water where individuals, cities, states, and countries are battling for the precious liquid. Dried up water supplies, sink holes the size of football fields, huge sprinkler irrigation systems, and rivers that catch fire are all indicators of the impending water crisis. The key question we face in the next decade is not whether water will be there, but rather will we allocate that water through conflict or cooperation (see Anderson, 1983a).

The answer to this question will depend on our willingness and ability to restructure the existing institution. To do this we must first understand what penalties and incentives are inherent in the alternative institutions. A system of well-defined and enforced private property rights links authority with responsibility and promotes cooperative exchanges resulting in gains from trade. In contrast, the political process most often results in conflict because there is not quid pro quo. To understand the possibilities for the market allocation of water, we must first ask what is the nature of a market. How did water rights in America evolve, and why do we not have a market for water? Will or can we have water markets in the U.S?

THE NATURE OF MARKETS

Before we can understand what institutions are necessary for a water market, we must first understand what a market is and does. For economists this may seem like a trite question, but most economic analysis does not focus on the fundamental economic problem. That problem is not simply to

solve an optimal control problem or a general equilibrium model for the marginal rates of substitution among combinations of outputs or inputs. The economic literature in general and the natural resource literature in particular has focused on the mathematical formulation of allocation problems and led policy makers to believe that centralized allocation and even multiple use management is possible. With enough equations and data this approach to economics lends itself well to centralized planning, though the results are often different from what is planned.

As Friedrich Hayek (1945) pointed out many years ago, however, this "is emphatically not the economic problem which society faces," but rather "it is a problem of the utilization of knowledge which is not given to anyone in its totality" (p. 519). From this formulation of the economic problem, two important aspects of markets emerge. First, we must be aware that markets are a process rather than an institution. The market process involves the coordination of individual actions as the actors attempt to make themselves better off. Through these actions gains from trade are exhausted and the allocation of resources is moved in the direction of efficiency. Markets are not static; they represent different actions at different times in response to different perceptions. To "create a market" or to replicate one becomes an impossible task once we recognize that it is a process rather than an event that we are trying to imitate. The key is that human action is coordinated through the market process which generates information and incentives for adjustment.

The second element of the market process which must be understood is that only individuals have "the knowledge of the particular circumstances of time and place" (Hayek, p. 521). Regardless of the size of computers, it is impossible to aggregate this particular information into data which can be fed into the planning process. As people coordinate their actions

through the market process, their knowledge of particular circumstances is revealed through prices which convey information about those circumstances. This information, however, comes from the market process and cannot be generated in its absence. Given today's rapidly changing circumstances, it is only individuals each in possession of the small amount of the total knowledge who can react to the relevant changes to enhance efficiency.

Related to the second element is the recognition that all values are subjective. Economists, of course, discuss the demand for final goods and services in this way; clearly the utility function of individuals is subjective (Buchanan, 1969). On the cost side, however, there is a tendency to treat costs as objective. The implication is that the engineering nature of the production function is all that is necessary to reveal costs. But once we recognize that all costs are opportunity costs, we must also recognize that those costs reflect human demands which are given up. In other words, costs are determined by demands elsewhere in the system and therefore are subjective. The realization that all values are subjective immediately throws into question all benefit-cost studies. We might be able to do a benefit-cost analysis in cases where the market process and the resulting prices translate subjective values into objective measures, but these are precisely the cases where there is no need for benefit-cost analysis. In those cases where the market process is not operating, it is not possible to obtain objective measures of the subjective values. Within this framework, an instrumentalist approach to law is also thrown into question. Given subjective values, it is impossible for courts or their appointed agents to carry out any comparison of benefits and costs. As we shall see, this point is particularly important for water law.

Let us put this understanding of the nature of markets into the context of water allocation. As the demands on a particular water source have increased, values of municipal, industrial, agricultural, and recreational uses have had to be traded off against one another. Those values will be continually changing across time and space. If private property rights to water are enforced and transferable, individuals interacting through the market process will reveal their subjective values and make the necessary trade-offs. No single planner or group of planners could possibly have the necessary knowledge of the particular circumstances of time and place to replicate this process.

None of this discussion is meant to ignore the possibility that water rights may not be well enough defined, enforced, or transferable to allow the market process to fully account for all subjective values. Where rights are too costly to specify, the market process will break down, but some alleged "market failure" results from legal constraints placed on the process. The more prevalent these constraints, the more likely water allocation will turn into political conflict. By recognizing how the market process could work in water allocation, there is a possibility of removing these constraints and encouraging cooperation.

THE EVOLUTION OF WATER MARKETS

Given the importance of particular circumstances of time and place, it is difficult to design the correct institutions for allocating a resource like water because continually changing values necessitate continually changing rights. To have gathered together a group of water experts in 1880 and expected them to predict the demands for water today would have been absurd. At that time they would have been thinking about mining and

agriculture and given little thought to municipal, industrial and certainly recreational uses.

Just as the market process evolves, so do the rules of the game which govern the behavior of people in that process; people produce institutions. Therefore, people will devote their efforts to defining and enforcing rights as long as their perceived additional benefits from doing so exceed their perceived additional costs. At any point in time, a unique amount of effort will be put into the definition and enforcement activities (See Anderson and Hill, 1975).

The frontiersmen entering the Great Plains faced circumstances which were quite different than their predecessors. With an average rainfall of between 15 and 20 inches annually on the Great Plains, it was clear from the start that access to water was a prime consideration. Hence, initial settlements occurred in river and stream bottoms. As long as there were vacant stream locations, the right to water accrued to the one who owned the bank of the stream and who had access to it by virtue of position. These riparian rights found historical precedent in Eastern laws which had been borrowed from the English common law. Early judges and lawyers in the West were familiar with Eastern law and were inclined to transfer it to the West.

As the settlement pressure increased, however, so did the pressure to change water institutions. Two factors were at work. First, mining technology required that water be taken from the stream and moved to non-riparian locations. Second, a great deal of nonriparian agricultural land could be made more productive if irrigation water could be moved to it.

Since the California mining camps were the first to feel major population pressure, the miners played an important role in the evolution of the prior appropriation doctrine.

Following a tradition of collective action on the mining frontiers of other continents, the miners formed districts, embracing from one to several of the existing "camps" or "diggings" and promulgated regulations for making and recording claims. The miners universally adopted the priority principle which simply recognized the superior claims of the first arrival. . . (McCurdy, pp. 236-7).

Included in this first arrival principle were the rules which regulated the water. The miners quickly realized that gold was not only found along stream beds, where a pan and shovel were all that were needed to extract the precious mineral. When deposits were discovered several miles from a stream, it made economic sense to move the water. "It universally became one of the mining customs that the right to divert and use a specific quantity of water could be acquired by prior appropriation " (McCurdy, p. 254). These customs had

one principle embodied in them all, and on which rests the "Arid Region Doctrine" of the ownership and use of water and that was the recognition of discovery, followed by prior appropriation, as the inception of the possessor's title, and development by working the claim as the condition of its retention (Kinney, p. 598).

When the inevitable conflicts arose over water rights, judges were torn between their training, which taught them that decisions ought to "conform, as nearly as possible, to the analogies of the common law," and the Western tradition which held that law "ought to be based on the wants of the community and the peculiar conditions of things" (Hoffman v. Stone, 7 Cal. 46, 48 (1957)). As a result, some courts found that appropriative principles were impractical and others found that cases must be decided by priority. The inability of courts to shed the shackles of previous institutions and recognize the importance of the new resource constraints led to an interesting and eventually harmful mix of Eastern and Western law.

The Eastern law brought with it such concepts as usufruct, beneficial use, and reasonable use. At first glance, usufruct which specifies that the water does not actually belong to the individual but rather is only available for the individual's use does not appear to inhibit allocation. Over time, however, this concept has come to mean that the water actually belongs to the state and therefore is subject to all manner of state regulations. Similarly, beneficial use and reasonable use are concepts which have been used to allow state legislatures to define those terms and preclude certain allocations. In Montana, the state constitution goes so far as to specify that using water for coal slurry pipeline is not beneficial. To make matters worse, the riparian doctrine maintained an element of common property by continuing to support the view that riparian owners have co-equal rights in water. Since riparian rights are generally not transferable, the possibility of market allocation was further restricted.

The doctrine of appropriation, on the other hand, established ownership rights that were clearly defined, enforced, and transferable. From the Western mining camps and cattle ranches came absolute property, equal footing for uses, and transferable ownership rights. As a result, markets were left to determine the value of water. The California courts asserted that "a comparison [by the courts] of the value of conflicting rights would be a novel mode of determining their legal superiority" (Weber v. Eureka Lake Company, CO., 15 Cal. 271, 175 (1860)). As Charles McCurdy stated, "Anyone might take and use water flowing on the public domain for any beneficial use subject only to the rights of any prior appropriators" (pp. 257-58). The doctrine of appropriation gave no preference to riparian landowners, allowing all users an equal opportunity to compete for water. Appropriations were limited according to the means used for appropriating or the purpose of the appropriation.

The law that evolved in the West reflected the greater relative scarcity of water in the region. As the settlers devoted more efforts to defining and enforcing property rights, a system of water law evolved which (1) granted to the first appropriator an exclusive right to the water and granted water rights to later appropriators on the condition that prior rights were met; (2) permitted the diversion of water from the streams so it could be used on nonriparian land; and (3) allowed for the transfer and exchange of water rights between individuals.

Under this set of water institutions, individuals invested in projects to deliver water where it was demanded. Well-defined exclusive rights provided the necessary tenure security to stimulate private investment. By 1910, over 13 million acres in the west were irrigated by private ventures. Between 1900 and 1910, the number of irrigated acres grew by 86.4 percent, with private enterprise accounting for almost of the increase. A variety of organizational structures were used to mobilize the necessary capital for building dams to store the water and aqueducts to deliver it. Though irrigation and mining activities received most of the water, population growth meant that municipal demands also had to be served.

None of this should imply that water rights and markets are without defects. Resources had to be used to define and enforce water rights and to resolve disputes over those rights. Disputes continually arose over who was the first in time and what quantities of water were claimed. Water markets operated in a region and time where information travelled slowly and risks were great. The architects of those water institutions were entrepreneurs in an evolutionary process which contributed to a working water market. The American frontier was an experiment in the evolution of property rights.

WHAT WENT WRONG?

Sometime between the late 1800s and the present, changes occurred which have thwarted the market process in water allocation. William Schabb recently argued that

markets capable of allocating water to satisfy all demands throughout the West have not developed, and one important reason is the prior appropriation doctrine itself. This doctrine, which was concerned primarily with new appropriations, ignored established uses. These private property rights became subject to supervening public controls; water rights, unlike land, were not freely transferable (pp. 25-26).

The problem, however, was not with the prior appropriations system but rather with the "supervening public controls." We moved "from prior appropriation to economic distribution of water by the state" (Laskey, p.173).

As Schaab himself points out,

the solution to inadequate supplies was usually not purchase of existing rights but political efforts to obtain massive public investment programs to augment natural supplies with storage and distribution systems. As long as the government stood ready to finance such projects, significant private markets were not likely to develop (p. 26).

The prior appropriation doctrine had the necessary ingredients for a viable market process, but state laws and bureaucratic policies "not only allow an unefficient use of western water, they insure it by reducing or eliminating the incentives and opportunities for transferring water to high-value uses" (Burness and Quirk, p. 121). How did the transformation to centralized control take place?

Four arguments were used to justify governmental intervention into the prior appropriation system. First, it was argued that water was so unique that it required the government to control its allocation. This uniqueness "led to the near-universal view that private ownership is unseemly or

dangerous for a type of property so uniquely the common concern of all" (Hirshleifer, et al, p. 367). As a result, the public trust doctrine frequently has come to be applied to water.

The second argument stems from a fear that private water supplies would constitute a natural monopoly, which would allow suppliers to charge high prices for the resource. William Smythe stated that fear clearly:

If we admit the theory that water flowing from the melting snows and gathered in lake and stream is a private commodity belonging to him who first appropriates it, regardless of the use for which he designs it, we have all the conditions for a hateful economic servitude. Next to bottling the air and sunshine no monopoly of natural resources would be fraught with more possibilities of abuse than the attempt to make merchandise of water in an arid land (quoted in Alston, p. 128).

The great water explorer John Wesley Powell also was concerned with "the danger of an evil monopoly which would charge an exploitive price and force the homesteader to pay a heavy tribute" (quoted in Alston, p. 129). Farmers were especially concerned that irrigation companies who charged a royalty or bonus for water would be in a position to refuse delivery of water and extract a monopoly payment. When Byron Wheeler of Colorado refused to pay the High Line Canal the royalty and delivery was refused, Colorado farmers sought legislation to control canal companies. The State Farmer's Irrigation and Protective Association contended that corporate-owned canal companies were common carriers just like railroads and therefore could only charge a fee for transporting the water and that such a fee was subject to state regulation. This group contended that the monopoly position of canal companies was "choking the life" out of agriculture through "an extortion which is unbearable" (Dunbar, p. 26). Such arguments won the day throughout the West and resulted in a morass of regulations governing water marketing. Viewed in retrospect, fear that the

appropriation doctrine would result in water monopolies had little empirical basis. The fact that nearly 90 percent of the commercial companies were in financial distress by the turn of the century does not suggest an industry earning super-normal profits from monopoly. Further, those commercial companies that were the only suppliers of water to a region had only one group of buyers. This situation led to possibilities for a bilateral monopoly, where irrigation companies and farmers bargained over the price of water. Thirdly, if water companies were to execute monopoly power, they had to withhold their product from the market, an action requiring large storage facilities which most companies did not have. Finally, when companies did try to exert their market power, they ran the risk of competition. In one Montana valley where a ditch company attempted to raise its water prices, the farmers banded together and raised the necessary capital to construct an alternative ditch. Potential competition of this sort is probably the most significant deterrent to market power.

Another reason given for support of nonmarket alternatives to water allocation was that capital markets were unable to provide the investment funds necessary for large projects. The fact is, however, that during the last two decades of the 19th century, entrepreneurs were actively organizing capital to develop water projects. This capital most often came from eastern cities or England. The Northern Colorado Irrigation Company, for example, constructed an 85-mile canal in the early 1880s at a cost of \$5.5 million in 1980 dollars with British capital (Dunbar, p. 24). In addition to long canals, there are examples of dams as long as 2,000 feet, tunnels over one-half mile long, and aqueducts 40 feet wide with capacities of 2,500 cubic feet per second. Though not massive when compared to later Bureau of Reclamation projects, these were sizable projects funded by private capital.

By the turn of the century, many of the feasible projects had been undertaken. Alfred Golze has stated that "while private enterprise had managed to bring under successful irrigation an impressive and substantial acreage of land, the point had been reached where further development would need stronger support by the federal and state governments" (Golze, p. 12). The reason this governmental support was necessary was that much of the further development was not economical. Entrepreneurs had organized capital and developed innovative institutional arrangements such as mutual irrigation companies to develop and deliver water. Given the remoteness of the West, capital markets were surprisingly well developed.

The last argument for governmental intervention in water allocation was that water use generated many third-party effects or externalities. To be sure, such externalities did exist in the emerging system of water rights on the frontier. However, many externalities were being taken into account. In the case of pollution from mining operations, the courts "issued injunctions when debris buried the claims of miners below, destroyed the growing crops of preemption claimants, filled irrigation ditches and poisoned their fruit trees, or split the houses of hydraulic miners downstream" (McCurdy, p. 262). Externalities do present real problems for markets, but that argument was overused as a justification for governmental intervention in water markets, especially during the early years.

The combination of these arguments was powerful and led to much more centralized allocation of water. Backers of this position argued that

Federal control would promote "scientific" management of the land and water resources, simultaneously "conserving" and "developing" them; prevent the monopolization of water by corporations and "speculators"; streamline the system for establishing and enforcing water rights; and encourage the development of rural democracy by war veterans and other deserving pioneers. These policies received the strong backing of at least three presidents

including the two Roosevelts and Herbert Hoover (Cuzan, p. 24).

Even though some courts opposed "using the organized power of the community to divest the equitably-acquired claims of men who had invinced a growth inducing 'incentive to improvement'" (McCurdy, p. 265), inefficient restrictions were being placed on the doctrine of appropriation by the late 19th century. The laws which evolved in the mining camps and common law courts, recognized prior appropriation; Western state constitutions and statutes, however, were moving toward the establishment of the public ownership of water. When the Colorado constitution was drafted on December 20, 1875, it declared all unappropriated water "to be the property of the public." Under such public ownership, appropriators receive only a usufructury right, not an actual ownership right, so state legislatures have been free to declare that the corpus was state property.

And, as the demands on water resources grew, courts and legislatures got more and more involved. Some of this involvement brought better requirements for the filing of new claims and adjudication of existing claims. But other legislation interfered with water marketing. The Wyoming system meddled the most with the Doctrine of Prior Appropriation and the possibility of transfers. Elwood Mead, an active advocate of governmental involvement in water projects, was primarily responsible for the legislative reform in Wyoming. Under his direction, legislation was passed which attached water to specific land tracts, disallowed ownership of water by canal companies if they did not actually own the land their water was irrigating, and regulated canal company water rates. Some states gave irrigation districts the power to tax and provided subsidies for canal construction. Many states specified what uses were beneficial and gave preference first to domestic, then to agricultural, and finally to manu-

facturing uses. These preferences along with restrictions on interbasin and interstate trades have restricted transferability of water rights and effectively thwarted the market process.

Judges have also contributed to the erosion of the prior appropriation doctrine by failing to abandon the common law precedent of riparian rights. Some elements of the riparian doctrine led directly to more public control of water allocation. First, with riparian ownership the resource is held in common, requiring regulation on open access. Second, since uses that were prejudicial to other owners required "license, grant or prescription," users naturally sought and obtained these preferences through legislation. The resultant mixture of riparian with the prior appropriation doctrine led to a confusion that stifled the effective establishment of private water rights. Without private property rights, the confusion could only be resolved through legislation and administration.

A doctrine that had evolved through the spontaneous order and decentralized actions of miners and irrigators was slowly degenerating to the status of state-controlled permits and licenses. As early as 1929, one legal scholar declared that the principle of appropriation had reached its zenith (Lasky). The water rights that evolved in the quasi-anarchistic setting of the frontier were replaced by permits to use state-owned water, with decisions on water use ultimately determined by state officials. Lasky argued in 1929 that

Prior-appropriation has been dying for 50 years
In 1903 Professor Mead declared it dead in Wyoming. How much more is this declaration true today--throughout the entire irrigating West? The administrative mechanism constructed to enforce it has been an instrument in destroying it! . . . We have left behind a system of individual property rights in water and are fast approaching a system of economic distribution of (per-

haps state-owned) water by a state administrative machinery under state-granted conditional privileges of user (Lasky, pp. 57-58).

SALVAGING THE APPROPRIATIONS DOCTRINE

The belief that the doctrine of appropriation contains a great deal of potential for market failure appears to be unfounded. Water quality and instream use do generate some special problems (Anderson, 1983a), but a system of well-established and transferable property rights generally promotes efficient water allocation. The allocation problems in many Western states are not the fault of the doctrine of prior appropriation as much as they are the fault of restriction placed on water markets. Administrative agencies and courts continually interfere with what constitutes a water right and, hence, with the definition and enforcement of those rights. Furthermore, nearly all states restrict transfers through the judicial or administrative process.

The prior appropriation doctrine could be salvaged if many of the restrictions on transfers were removed. When the diversion and use of water cannot be changed, high valued alternatives are foregone at a cost to both the water owner and society. Burness and Quirk assert "that often what appears to be a shortage of water is actually the manifestation of restrictions on water rights transfer" (Burness and Quirk, p. 133). The Metropolitan Water District (MWD) in Southern California stands to lose large quantities of water since it has low priority rights in the Colorado River. If water rights were transferable, however, much of this shortfall could be made up by conservation measures in the Imperial Irrigation District (IID). The problem is that "existing California statutes preclude the transfer of water outside irrigation districts; one would hope enabling legislation would be quickly forthcoming . . ." (Burness and Quirk, p. 133).

Pressure for such transfers is now being applied by the MWD and the Environmental Defense Fund (EDF). A study by the latter has shown that water efficiency in the Imperial Irrigation District can be increased so that approximately 450,000 acre-feet of water per year can be conserved (Stavins, p. xix). These conservation techniques would include the construction of more efficient irrigation facilities and different irrigation management practices. The physical improvements would include lining canals, expanding seepage recovery systems, constructing more regulatory reservoirs, expanding electronic control, and providing more flexible deliveries. On-farm improvements would include expanding the use of tail-water recovery systems and improving irrigation techniques regarding leach water (Stavins, p. 46). The EDF study shows that the MWD could finance the improvement in return for the water.

There are three likely arguments against allowing such a transfer. First, it is often held that if an irrigation district is "wasting" its water, it should not have a legal claim to that water in the first place. Some would interpret an agreement by the IID to these improvements to suggest that it has been wasting the water. Second, the IID's contract with the Department of Interior says that "water shall be delivered as ordered by the district, and as reasonably required for potable and irrigation purposes within the boundaries of the district," making any transfer out of the district is an abrogation of the contract. Therefore, such a transfer must be approved by the Bureau of Reclamation. Finally, the irrigation districts are not allowed to profit from the sale of water delivered from Federal irrigation projects. Having costs paid by the MWD would allow the farms to "profit" from the transfer.

This example immediately brings to mind several possibilities for encouraging the market process in water allocation. Bureaucracies at all

levels could remove restrictions on transfers. Eliminating beneficial use requirements, allowing profitable transfers, and removing prioritized use limitations would make rights more transferable. As argued above, it is impossible for bureaucrats and politicians to obtain accurate information to determine which transfers are efficiency enhancing. It is market transfers themselves which reveal subjective value and force a careful weighing of trade offs.

Two recent Supreme Court cases suggest that courts are recognizing the importance of transferability. In the Sporhase v. Nebraska case the Supreme Court ruled that the commerce clause of the Constitution forbids the state of Nebraska from preventing the transfer of water into uses in Colorado. Following this decision, the Supreme Court ruled in El Paso v. Reynolds that New Mexico could not restrict the export of 296,000 acre-feet of groundwater out of New Mexico into Texas (Utton, pp. ix-xv). More strict adherence to the commerce clause should further enhance the market process in water.

Another recent decision, Colorado v. New Mexico, however, works in opposition to water markets. In this case the lower court found that a late claimant on the Vermejo River which flows from Colorado into New Mexico could withdraw 4,000 acre-feet per year even though the river was fully appropriated in New Mexico. The special water master in this case found that an irrigation district in New Mexico was not using its water efficiently and therefore was not "materially affected" by the Colorado diversion. This example offered a perfect case where water markets could have solved the allocation problem. If the Colorado River Fuel and Iron Steel Corporation valued the water highly enough, it could have purchased that water from downstream users. The Supreme Court ruled that when "both

states recognize the doctrine of prior appropriation, priority becomes the guiding principle, but not the sole criterion, in determining an equitable apportionment" (51 LW 4045). By allowing priority to rule, the court could have encouraged market allocation. Instead, the potential for more political conflicts through the doctrine of equitable apportionment was encouraged.

As stated above, third party effects cannot be ignored. One of the main problems is that water is used and reused along the course of the stream. The return flows become water for downstream users. If an upstream user increases his consumption or if a downstreamer transfers his diversion upstream, return flows will be diminished. To eliminate this potential third-party impairment, the state of New Mexico has basically defined rights in terms of consumption rather than diversion (See Gisser and Johnson and Tregarthen). Such an improvement in the definition of water rights can significantly enhance the potential for water markets.

Salvaging the appropriation doctrine does not require new institutions but, rather, the elimination of existing restrictions on the market. The problem is that existing bureaucratic agencies lose power when allocation is turned over to the market process. For water markets to develop, ideas must change and new political coalitions will have to reduce the power of bureaucracies.

CONCLUSION

With the possibility of continually expanding water supplies "drying up," more emphasis must be placed on coordinating existing demands and supplies. The US Geological Survey has recently warned in its "National Water Summary" that shortages are likely to occur in some of the southern and central High Plain states, in the Colorado River Basin, in southern Arizona, and in the Central Valley of California. The shortages, of

course, are a reflection of the fact that water prices are being kept too low. In economic terms, a crisis exists when the quantity demanded is greater than the quantity available and when there is little time to adjust either of them. This is exactly what the energy crisis was and is exactly what the water crisis will be. Governmental agencies have responded by attempting to constrain demand, ration water, and increase available supplies. The supply projects have been extremely costly, and it is questionable whether funds for them will continue to be available. Without a price mechanism operating on water supply and demand, crisis situations will continue to arise, and political conflicts will become more prevalent.

There simply is no substitute for the market process. As demands grow, the allocation problems and the necessary information to solve them become more and more complex. It will be impossible for special water masters or state water engineers to perform a balancing act. At the same time, however, hydrological models of water basins and computer capacity leads some to conclude that centralized planning is more feasible. William Schaab concluded that basin models can

perform the foundations of an effective market to allocate water among those who need it. The model will organize the essential market information concerning the geohydrological reality (the supply) and the existing water uses (the demand); it will specify the interests that must be "purchased" (the incremental impairments) and provide a basis for establishing a price (the indemnity). The deals that result will not be free of coercion. . . (p. 50).

This conclusion misses the essential nature of the market process. Inserting geohydrological reality into the model does not give us any information about economic supply. The concept of supply depends on opportunity costs which in turn depend upon subjective values of market participants. There is no way that these values can be put into a basin model. Furthermore, knowing the existing water uses gives us little information

about the economic demand. We cannot predict the alternative uses for water and the value in those uses. Such predictions depend upon the perceptions of entrepreneurs again making it impossible to model. Without demand and supply, establishing price is inconceivable. Finally, to suggest that models can form the "foundation of an effective market" but that the results "will not be free of coercion" is a contradiction in terms. The market is a coordinating process wherein bargaining for mutual consent exhausts the gains from trade. Coercion is a characteristic of political solutions to water problems that is what generates conflict rather than cooperation. Hydrological models at best provide us with a snapshot of a water basin at a point in time. To coordinate demands and supplies requires a moving picture, and this is what the market process is.

Unfortunately, it is true that "all things considered, the interplay among existing and new users, administrators, scientists and engineers, courts and lawyers, and structured markets is more promising than at the creation of water bureaucracies 75 years ago" (Schaab, p. 51). It is not the interplay of these actors in a structured market that will solve most of our water problems. Though some third-party effects must be addressed through the courts and legislatures, a majority of water allocation problems can be handled through the market process. Until we recognize this and do something about it, we will be faced with conflict rather than cooperation in market allocation.

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Biography
for
TERRY L. ANDERSON

Terry L. Anderson was born in 1946 in Billings, Montana. After receiving his primary and secondary education in Bridger, Montana, he attended the University of Montana where he graduated cum laude in 1968. He received his M.A. in 1970 and his Ph.D. in 1972 from the University of Washington. At that time, Terry began teaching economics at Montana State University where he currently is a Professor. During 1977-78 he was a National Fellow at the Hoover Institution, and in 1983 he was a visiting scholar at Oxford University (England) and the University of Basel (Switzerland).

In addition to publishing numerous articles in national journals, Professor Anderson has authored or co-authored several books including The Birth of a Transfer Society and Water Crisis: Ending the Policy Drought. Dr. Anderson has been actively involved in economic education for many years and has been Executive Director of the Montana Council on Economic Education since 1978. He has consulted on the production of economic films and worked extensively with business persons and community leaders on economic education.



Alternative Policy Strategies for Water Marketing:
Some Observations on the State Management Approach*

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State of Montana, Select Committee on Water Marketing,

ALTERNATIVE POLICY STRATEGIES FOR WATER MARKETING:
SOME OBSERVATIONS ON THE STATE MANAGEMENT APPROACH

The issue before this seminar is whether Montana water should be transferred out of state for certain industrial purposes and, if so, how should such transfer take place or be regulated.

California's experience with water transfers is primarily one of intrastate movement of water rather than interstate transfer. However, there are similarities between the California "experience" and some of those problems which arise in interstate transfer of water which may make the experience in California useful to those in Montana. In this regard, I will draw upon both the California legal structure and some practical experience I have had in implementing some of the legal concepts.

There is a basic common denominator between the issue of water export from Montana and California's experience; that is, protection of the areas of origin. In Montana it is the entire state which is to be protected against transfers for uses in other states. In California, it is protection of the northern portion of the state against areas to which water is exported in the southern part of the state. Thus, in both cases, the basic problem is: how do you protect existing and future needs of the exporting area - the area of origin - in a reasonable and equitable manner?

In California approximately 80 percent of the people and the major demand for water, including for agriculture, is in the southern two-thirds of the state, yet 70 percent of the water originates in the northern third of the state. ^{1/} Northern California and Montana can be compared to each other. The southern two-thirds of California and those states which may use Montana water for industrial purposes can be compared.

The California Legal Framework

Water controversy in California is not new. In the 1920's plans to move water from north to south were formulated. ^{2/} The California legislature responded with protective measures for areas of origin. ^{3/} The actual development of a statewide water project did not occur for many decades and only now, years after the water projects were in place and with the practical experience of their operation, can we evaluate the framework of legal protections.

1. State Water Right Applications. Since 1914, the primary means of appropriation of water in California is the permit system administered by the State Water Resources Control Board, a five member quasi-judicial body whose members are appointed by the governor for staggered four year terms. ^{4/} The board has been in existence since 1967. Previously the state had utilized

a number of different administrative structures for this purpose. In 1927 the legislature enacted a law which provided for the filing by the state itself of applications to appropriate water "required in the development and completion . . . of a general or coordinated plan looking toward the development, utilization or conservation of the water resources of the state." ^{5/} These applications are exempt from the diligence requirement of California law and remain dormant until the development of the stream or area is about to begin. The "state filings" are, in fact, "reservations" but rather than being general, they are tied to a specific water project. In other words, rather than setting aside all of the water or a percentage of the water in a stream, applications are filed on potential projects prior to their becoming viable. The state applications are held by the Water Resources Control Board until someone wishes to utilize the water covered by the application. If the project covered by the application is proposed, the application can be assigned to the developer by the board. If the developer proposes the use of the water covered by the application in a manner different from that in the state application, a "release from priority" can be made which would eliminate the state application's priority over the new project.

It was intended that a key element of this reservation system be the "area of origin" protection built into it which requires the Board, when making assignments or releases from priority, to

reserve water supplies for the counties of origin of the water. As a practical matter, in carrying out this responsibility the board does not provide a specific acre foot reservation but, in effect, paraphrases the law by making the new appropriation subject to "any such water necessary for the development of the county." This is done because specific estimates of future needs are rarely available. One of the drawbacks of this reservation law is that water does not respect county lines.

If realistic data are available as to the needs of the area of origin during the foreseeable future such a reservation provision could be useful and applied to the marketing, for example, by the State of Montana of water from federal reservoirs where the state has been given the authority to market such water. In the absence of such information, reliance on the reservation can create a false sense of security.

2. Direct State and Federal Project Construction: Because of the enormous cost involved in moving water from areas of origin to areas of need, since the 1940's the major water transfers in California have been made by the state and federal governments. When the state and federal government began massive transfers from Northern to Central and Southern California in the last 25 years, water wars have broken out in earnest. The Federal Central Valley Project made its first deliveries in 1939 and today has major reservoirs and a canal system that annually

delivers 4.5 million ^{6/} acre feet of water to central California and the San Joaquin Valley.

The State Water Project, which made its first deliveries in 1962, delivers approximately 2 million acre feet a year through an aqueduct system which extends south of the Tehachapi Mountains into the south coastal basin and serves users as far south as the Mexican border. ^{7/} Both the state and federal water projects transfer and allocate water. For example, the state water project serves 30 separate contractors covering a major part of the state. The water rights for the State Water Project are in terms of diversion and storage rights. No detailed permit terms control the place of use as would be the case in a small permit. The allocations among contractors (within the physical capabilities of the project facilities) are discretionary with the operator of the project. Transfers within the project service area generally do not need Board approval.

Similarly, the Federal Central Valley Project is an integrated system made up of many individual dams and aqueducts. The operator has considerable flexibility within the nearly 9 million acre service area to move water around and allocate it to users.

During the drought of 1977, water was reallocated from Southern California urban areas to agricultural users in the San Joaquin Valley by the state project. Water was also reallocated

by the Central Valley Project which operated a water bank. Thus, while the State Water Project operates pursuant to traditional appropriative water rights, the existence of physical works - an aqueduct system - to move water from one area to another makes the state, as a project operator, a major water allocator. I suggest that the State of Montana seriously consider serving as the project developer of any facility to transfer water out of the state.

3. Special Area of Origin Provisions. Although the state and federal water projects are operated pursuant to water right permits issued by the State Water Resources Control Board, ^{8/} they also are subject to additional area of origin protections of California law. The "Watershed Protection Act" applies to both the state and federal projects. This law provides that the projects "shall not directly or indirectly deprive the watershed or area where water originates, or an area immediately adjacent thereto which can conveniently be supplied with water therefrom, of the prior right to all water reasonably required to adequately supply the beneficial needs of the watershed, area, or any of the inhabitants or property owners therein." ^{9/} As might be expected, this general statutory protection sounds impressive but it must be converted into specific guarantees if it is to provide realistic protection to the areas of origin. In determining how such a statute should be implemented, one of the biggest problems over the years was the failure of areas of origin, many of which

are sparsely populated with only limited development, to realistically evaluate their future water needs. I suspect the State of Montana will have similar problems in quantifying its long term needs.

What is the legal effect of the California Watershed Protection Act priority? Many years ago the Attorney General of California held this provision creates an inchoate right or priority. ^{10/} Thus, aside from any state funded projects, the protection is not automatic and unless an entity in the area of origin has the wherewithal to exercise the inchoate right, it will remain unexercised. Thus, the sinequanon of area of origin laws is the economic ability to take advantage of the legal provisions. This is a difficult problem which has to be faced realistically by any state involved in transfers. Californians have debated for years the future needs of the areas of origin. Are we thinking in terms of 25 years, 50 years, or 100 years in the future? Some people talk in terms of "ultimate" needs - whatever they are. This dilemma is raised by the Sporhase ^{11/} case and some of the approaches which have been suggested for Montana. To merely reserve everything for the future and prevent export is not a rational means of proceeding. On the other hand, in the absence of a firm understanding of future needs, legal reservations may be practically worthless. The California experience

convinces me that no system will eliminate the tensions or disagreements between areas of origin and areas of use. You must tailor a program to your specific needs.

When the State Water Project was approved by the voters of California in 1960, the legislative package which created the project included a unique feature intended to enable the areas of origin to meet their future needs and take advantage of these provisions. The \$1.75 billion bond issue which financed the project included a provision setting aside a portion of the bonds (almost \$300 million) to build future facilities to meet water needs in the areas of origin to and to continue the delivery of water already being exported. Two things have happened since that time. First, water projects now cost a great deal more than contemplated in the initial bond issue and, the available funds are inadequate to develop any significant water projects in the areas of origin. Second, even after all these years, the areas of origin still do not have a firm fix on their specific water needs. Exports continue to grow and the areas of origin continue to be concerned.

Nevertheless, I believe any state developed water transfer program should include provisions to fund projects to meet local needs. The concept remains a viable one in overcoming the inherent practical limitations of legal protections. It must be flexible so that when projects are needed, there are no artificial limits on available funds.

4. The State Regulatory Approach. The Governor's Commission To Review California Water Rights Law made an intensive study of California law over a two year period. In its 1978 report, ^{12/} the commission recommended legislation to encourage "voluntary transfers of water rights, such as by sale or lease." The commission said that "where the interests of third parties and areas of origin are properly protected . . . such transfers are in the public interest." ^{13/} While the commission's specific recommendations to modify basic appropriation law were not adopted in the recommended form, several changes were made in California law to make transfers more simple. ^{14/} These will affect private transfers more likely than the State and Federal Projects.

A Recommendation: Marketing by the Project Developer

As has been mentioned, by building an aqueduct system 440 miles long, the State of California owns the only physical means of making a north-south water transfer. By providing an aqueduct system with alternative delivery points (the main aqueduct has several branch aqueducts and can serve varying quantities to the San Francisco Bay Area, the San Joaquin Valley or Southern California), the state, by its operation of the project, can make transfers and reallocations on a daily basis provided the contractual flexibility with its customers. It also can utilize unused aqueduct capacity to transfer water owned by others.

In building this water transfer capability and marketing the water or conveying the water of others, the state can set the price. The state water project in California operates on the concept that annually all of the costs allocated to each project use are recoverable from project users. Thus, water is not sold at a fixed price. At any given time, an acre foot of water will cost the actual cost of project capital repayment and operations for that year divided by the water delivered. 15/ This procedure is vastly superior to selling water for a fixed price. Since the price of power and other variable costs have gone up dramatically in the last few years, those projects operating on fixed water prices simply go bankrupt, unless they are operated by the federal government. It is not realistic to sell water for a cost per acre foot over a long term. If the State of Montana were to participate in the construction of a pipeline either by itself or in conjunction with other states or entities, it must develop a cost recovery program taking this into account. Within a basic framework of such cost recovery, competition for the sale of water could be provided through competitive bidding within the structure of the state repayment program. While the California State Water Project is not managed in this manner, it has been suggested that such a procedure be utilized for additional increments of water it develops. It is a concept which merits serious consideration.

When a state becomes a water marketer and is responsible for the physical facilities necessary to market the water, it can directly carry out the state's policy with respect to protecting the areas of origin. Such a procedure is compatible with interstate allocation by compacts since the compact must be entered into by the state. In addition, it is compatible with congressional allocation of water. (It may well be that water developed by a federal project in Montana may be transferred).

Some people in California are frustrated by the dual responsibility for state management of water. The Water Resources Control Board is an independent quasi-judicial agency and its regulatory authority includes jurisdiction over the state's own water project. This is important because it ensures that the state project is treated the same as any other appropriator in the state.

The Department of Water Resources, the water marketing arm of the state, is directed by a gubernatorial appointee. This clearly puts the marketing policy and pricing responsibilities in the hands of a policy person rather than a regulatory body.

Often when a program of water development is proposed, there is an insistence that the program be carried out within the framework of a state management plan or water plan. Throughout the west, most states have developed water plans. The California

Water Resources Control Board must carry out its authority within the framework of the California Water Plan. ^{16/} Most water plans include (1) a list of water projects which are desirable or, on the other hand, a list of minimum flows to be maintained in streams where projects could be built in order to protect the natural values of the streams and (2) policies which are usually stated in general terms. ^{17/} Once the state establishes these policies and assembles the physical needs, the question then becomes "how do you evaluate potential uses against such a plan?" It is a very subjective activity and unless the responsibility is clearly placed on someone with a broad public accountability, it can be a very difficult one. In this regard interstate and intrastate transfers must be comparably treated.

One final aspect of interstate transfers needs to be considered. The situation is different when you are transferring existing developed water supplies or developing new supplies to be transferred. In California, the latter has been the primary experience. There is a growing interest by some existing users to transfer their existing water rights to someone else. ^{18/} In most cases the state or federal aqueducts must be used to transfer the water.

The experience of the State of California during the 1977 drought showed that water marketing could be effectively carried out. ^{19/} When existing water supplies are transferred, it is

useful to have a governmental agency of some type to consider the policy matters that cannot be negotiated by buyer and seller. Particularly when dealing with interstate transfers, the state must be directly involved if it is to assure equitable treatment of those within the state and those outside it.

I would like to close this short paper with a practical suggestion. Droughts come infrequently. The California drought of 1977 was the first major drought since 1934. A whole generation grew up without experiencing a real drought. People were used to a relative abundance of water. One thing that became dramatically clear from our drought experience was that shortage formulas of most water projects are unrealistic. They are designed to meet most needs even in dry years. That means, in other years, more water is available than normal year demands. Not enough consideration is given to the taking of realistic shortages in drought times.

I strongly recommend two possible marketing strategies to simplify the problems thus caused. First, when marketing water, consider requiring the buyer to obtain contingent dry year water supplies. In other words, build in greater shortages. This could be accomplished by the buyer contracting to overdraft ground water or contracting to purchase agricultural water supplies. If the transfer is for coal slurry, the deliveries may be interruptible with the buyer required to have emergency coal

supplies. If the transfer is not for coal slurry but for consumptive use, the seller could reduce the transfer in dry years more than traditionally would be required. Within the area of origin, arrangements may be made to temporarily buy out an area of origin user during the dry period and make that available for transfer. In California, for example, water which is used for growing rice, could be purchased on a short term basis for transfer at an economically advantageous price. This would increase the flexibility of the transferring agency and greatly reduce the stresses in the area of origin.

It is the delivering of a nearly full supply during the dry period which causes the greatest crisis in the area of origin. A long-term dependable supply can be obtained by the buyer by using alternative contingent sources for 10 to 35 percent of the normal water delivery in those infrequent dry years. Thus, in few years will areas of origin be stressed. Existing water marketing schemes are far too conservative. New creative efforts are needed. It is possible to create a transfer program that is realistic, fair and economically beneficial to both areas of origin and areas of need.

NOTES

1. California Department of Water Resources, The California Water Plan - Outlook in 1982 (Preprint) Bulletin 160-82, December 1982, p. II-2.
2. Bulletin 160-82, op. cit., p. II-6. Major urban water development projects predated these statewide efforts. At the turn of the century, San Francisco and Los Angeles were developing plans to go to the Sierras for water supplies. They were not without major controversy. In the case of Los Angeles particularly, this continues today. When San Francisco tapped the Tuolumne River in Yosemite National Park, this was one of the first environmental battles for the Sierra Club.
3. These are discussed in detail in Robie and Kletzing, "Area of Origin Statutes - The California Experience," 15 Idaho Law Review 419, (1979).
4. Cal. Water Code Sec. 175, 1200-1851.
5. Now Cal. Water Code Sec. 10500-10507.
6. U.S. Bureau of Reclamation, Annual Report 1980, Water Distribution 1980, Appendix 1, p. 282-284.

7. California Department of Water Resources, Management of the California State Water Project, Bulletin 132-83, Nov. 1983. This annual series, which began in 1964, summarizes pertinent data relating to the project.
8. Although the federal government as a project operator also allocates water, state control over these decisions is limited. California vs. U.S., 98 S.Ct. 2985 (1978) provides that projects built under the Reclamation Act of 1902 must be operated in conformity with state water rights laws, but it is desirable to obtain contractual agreements to assure that state policies are carried out to the extent feasible in management of federal projects.
9. Cal. Water Code Sec. 11460 et seq. The Water Code also includes special provisions applicable to the Sacramento-San Joaquin Delta. This "Delta Protection Act" is similar in concept to the Watershed Protection Act. See Cal. Water Code Sec. 12200-12220.
10. 25 Op. Cal. Atty. Gen. 8, 17-18 (1955). The Superior Court for the City and County of San Francisco recently concurred in this interpretation. U.S. of America v. State Water Resources Control Board, Judicial Council Coordination Proceeding No. 548 (April 13, 1984).

11. Sporhase v. Nebraska, 102 S.Ct. 3456 1982.
12. California, Governor's Commission to Review California Water Rights Law, Final Report, December 1978.

A staff paper prepared for the Commission summarized California law and is most informative. Lee, Clifford, The Transfer of Water Rights in California (Staff Paper No. 5) December 1977.

13. California Governor's Commission to Review California Water Rights Law, Summary Final Report, December 1978, p. 3.
14. See Assembly, California Legislature, Office of Research, A Marketing Approach to Water Allocation (February 23, 1983).

See also California Water Code Sections 1725-45 (temporary and long term transfers) and policy provisions in Water Code Section 109: "It is hereby declared to be the established policy of this state to facilitate the voluntary transfer of water and water rights where consistent with the public welfare of the place of export and the place of import."

"The Legislature hereby directs the Department of Water Resources, State Water Resources Control Board, and all

other appropriate state agencies to encourage voluntary transfers of water and water rights, including . . . providing technical assistance to persons to identify and implement water conservation measures which will make additional water available for transfer."

15. This form of cost recovery has been criticized severely. It is argued that the state should obtain "market value" rather than recover its costs. Such a recommendation is politically infeasible in California since the existing process is well established.

Debate over this market value concept should not obscure the real issue presented in this paper, that is, should the state have a major role in the marketing of the water? Once the state role is established, either pricing system will work.

16. Cal. Water Code Sec. 1256. See Johnson Rancho County Water District v. State Water Rights Board (1965) 235 Cal. App. 2d 863.
17. For an example of a modern statement of such policy, see California Department of Water Resources and Water Resources Control Board, "Policies and Goals for Water Management for

the Next 20 Years," Bulletin 4, January 1982. This updated the original "California Water Plan," Bulletin 3, May 1957.

18. See Assembly Calif. Legislature, Assembly Office of Research, A Marketing Approach to Water Allocation (Feb. 23, 1983).
19. Major transfers within the State Water Project took place. Also some water of others was transferred. The process, however, included significant controversy over area of origin issues. For a summary of California water management during the drought, see California Department of Water Resources, The 1976-77 Drought - A Review, May 1978.

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Subject to Revision

Some Remarks on the Role
of Markets in Managing
Western Water

By: Gilbert Bonem* and F. Lee Brown**

To be presented to the Select Committee on Water Marketing
of the Montana Legislature
and the Lincoln Institute of Land Policy
on July 14, 1984

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Introduction

We are pleased to have this opportunity to address this committee on the subject of water markets and water marketing. We have been studying this subject for some time now with particular reference to New Mexico, the Southwest, and the Colorado River Basin. Hopefully some of the observations and conclusions we have made and reached about water markets in those geographic regions will be useful to your deliberations here in Montana.

Let us briefly outline the major elements of the remarks we will make. First, it is important to consider both the historical and current context within which decisions about water markets as an institution are being made. The suitability of this candidate institution should be judged against the function it is intended to serve. Second, we will make some general remarks about water markets, built around the experience of New Mexico which the Wall Street Journal has editorially characterized as the one western state that places main reliance on the market as its water reallocating institution.¹ In this discussion we will try to point out both advantages and disadvantages of the marketplace for water. Third, we will describe what we, and others, term the community approach to water, particularly as contrasted with the commodity dimension of water as found in the marketplace. Finally, we will make a few comments about the situations of New Mexico and Montana relative to the existing and potential out-of-state demand for water occurring within their respective borders.

Water and Water Markets in the West

In discussing water and water markets in the western U.S. there is

no better place to start than John Wesley Powell's 1878 Report on the Lands of the Arid Region of the United States.² The Report was the result of more than ten years that Powell had spent exploring, mapping, measuring, and pondering the conditions found in the arid West.³ Powell described in detail temperatures, precipitation, streamflows, and elevations in the West. More importantly he set forth a series of policies for western development that, in sum, provided the most coherent blueprint for the West that was available. Powell's vision of the West involved an irrigated, agrarian democracy, Jeffersonian in character, and in which the key natural resource would be water. His prescriptions for western water policy were often controversial but provided the first attempt at scientific analysis of this complex western problem.

Today, more than a hundred years after publication of Powell's report the West is vastly different. The key role of water remains unchanged. There is, however, an enormous difference in the character of water problems that we face today, and the crucial difference involves the full or near-full appropriation of western water that is evolving. In our home state of New Mexico there is very little unappropriated water and some basins are probably over-appropriated. In Montana, as we understand the situation, the current debate is principally about who shall obtain unappropriated waters and what is an efficient, equitable, and democratic way to manage what are, in fact, some of the few remaining unappropriated water supplies in the West.

The contemporary era is, then, one of water management, and one way to manage water is through the market mechanism. Essentially, the marketplace allocates water in accord with dollar votes: the person or company choosing to bid the highest -- that is, vote the most dollars --

for water will obtain the water. Persons or companies who make only low bids will receive only small or negligible amounts. Thus, water allocation and management occur through casting bids or dollar votes for water, and, in the marketplace, water becomes a freely transferable commodity. Currently, the market mechanism is being used to some extent in New Mexico, and a brief description of New Mexico's water markets may be helpful in Montana.

1. An explicit statement about New Mexico's policy toward water markets appears in the State's 1976 Assessment of Water Resources:

"Aside from the small amounts of water that presently are surplus to current requirements in New Mexico, the only way in which water requirements can be met is by using existing water supplies more efficiently or by using water supplies for a different purpose than they are now being used. One of the assumptions used in (this New Mexico document) is that increased needs for municipal, industrial, mining, and certain other uses will be met by retirement of irrigated agriculture. Fundamental to this assumption is the prior assumption that irrigation water produces less cash return than an equal amount of water used in manufacturing or mining. Therefore, it could be purchased and transferred to such a higher economic use.....New Mexico's (water) law provides for the change in place and purpose of use; and such transfers are and have been taking place for many years."

A more recent statement to the same effect was made by Steve Reynolds, New Mexico's State Engineer, in District Court testimony in the case of El Paso v. Reynolds, et. al. in 1982:

"Under New Mexico law and, of course, based on our 1907 legislation, a person has the right to change the place and purpose of his water right if that change can be accomplished without impairment of or detriment to any other water right. And it can be accomplished only by application to the State Engineer in dealing with surface water or waters in declared underground water basins, and that mechanism has, of course, been used to meet growing municipal and industrial requirements by the acquisition and transfer of irrigation water rights."

2. The process by which water transfers occur in New Mexico has been described by Khoshakhlagh and associates.⁶ After two parties agree

to a transfer, the buyer files an application for transfer in the State Engineer's Office. The application is examined for procedural adequacy and for possible negative effects on other rightholders or the public interest. If the transfer is approved, public notice must appear in a newspaper for three weeks. Protests of the transfer may be filed with the State Engineer's Office, and decisions of this office, whether one of approval or rejection, may be taken to District Court.

3. By no means is all water in New Mexico freely transferable. One barrier to market transactions is that in some basins water rights have not been adjudicated, and quantities of water to which rightholders are entitled are inadequately defined. A second barrier is that some (but not all) Bureau of Reclamation contracts for water supply from federal projects have non-transferability or limited transferability clauses. A third barrier is that various conservancy and irrigation districts in the State maintain that water rights held within their boundaries cannot be transferred outside their boundaries without the district's consent. A fourth barrier is that interstate compacts may limit transferability. For example, the Rio Grande Compact between New Mexico, Texas, and Colorado effectively prohibits water transfers from northern New Mexico to central New Mexico via compact arrangements for streamflow accounting. In addition to these barriers to water transfer, there are others. In particular, we shall discuss below how social and cultural attitudes modify the operation of New Mexico water markets.

4. During the seventies and eighties frequent use of the marketplace for water has been made in virtually all basins of the State with the price paid for the perpetual right to one consumptive acre-foot of

water having ranged from \$150 in a basin still possessing unappropriated water to over \$11,000 in a subbasin fully appropriated and dominated by municipal use. In some basins the price escalation has been dramatic.

Let us generalize for a moment and list a few of the major advantages and disadvantages of water markets.

1. One important advantage is that water markets provide decentralized decision-making about water allocation. Rather than having a centralized agency allocate water to different companies and people via decree, the market allocates water by having individual economic agents voluntarily decide the amounts they will pay for water or accept as payment.

2. Another advantage of water markets is that water tends to move to uses in which it has highest economic value. That is, if the net return on water in power generation is \$500 per acre-foot and in raising alfalfa is \$35 per acre-foot, the power company will be able to bid water away from the irrigator. Thus, the economic product produced by water tends to be enhanced. A byproduct of this market pricing is that the price itself comes to provide a clear signal of the opportunity cost of using water in any particular enterprise, with wiser decisions being one likely result.

3. Another advantage is that there is relatively rapid accommodation of new water users. If water transfers in the marketplace were simply disallowed, it would be difficult for new users such as growing cities or energy companies to obtain water.

Having listed our perception of the main advantages of water markets, let us note parenthetically that use of the marketplace is unlikely to require, on a regionwide basis, abandonment of enormous amounts of irrigated acreage. Water requirements of cities, energy companies, and

other new uses are relatively small in comparison with water use in irrigated agriculture. The marketplace would shift some water away from irrigated agriculture to these other uses, but the quantitative volume of this shift is not likely to be enormous in most cases.

Are there disadvantages of water markets? We think there are.

1. One disadvantage is that water rights may be consolidated by one or a few entities. Consolidation may effectively prohibit other water demanders from obtaining water. Though largely undocumented, such consolidation of ownership has apparently occurred in one basin in New Mexico in which a few copper companies control over ninety percent of the water rights with the result that a local community has had difficulty obtaining rights it needs as a result of population growth. John Wesley Powell and his followers, particularly Elwood Mead, were concerned about the dangers of water monopolies one hundred years ago,⁷ and in the 1980s we should be watchful for problems of water rights consolidation.

2. Another disadvantage of water markets is that there may be unequal access to the market. Two examples suffice to clarify this point. First, Khoshakhlagh and associates mention that there may be general ignorance about the water transfer procedure.⁸ General ignorance about average and acceptable water right prices is another dimension of the problem with inequitable treatment one possible result. A second example of unequal market access is that in New Mexico a company interested in acquiring water rights to maintain a creek flow for in-stream fishing could not do so. In-stream water uses are not recognized as beneficial use of water in New Mexico and some other western states.

Our view is that, in general, the advantages of water markets outweigh the disadvantages and that western states should place greater reliance on water markets. Yet, there is one limitation of water markets which is greater than the preceding ones and consists of the fact that water has social, cultural, and symbolic values in addition to its purely marketplace value as a commodity. An approach to water issues that emphasizes these social and symbolic values we call the community approach to water. The implication of this approach is that water is more than just another commodity, and consequently cannot be treated exclusively as such. The proposition, then, that the West needs more reliance on water markets must be followed by the proposition that the water market is only an institutional instrument, not a fetish, and that the community interest in water must sometimes be asserted in order to secure legitimate public aims. Let us elaborate on this community aspect of water.

The Community Approach to Water

The community dimension of water refers collectively to the social, cultural, political, and symbolic values of water that give it an importance beyond the value that is established in the marketplace. These community values of water stem from several sources.

1. Water is one of the basic features of the natural landscape. Whether it is found in rivers, lakes, or oceans or not found at all as in deserts, it plays a fundamental role in nature. The early Greeks thought that the four elements of nature were earth, water, fire, and air.⁹ Aristotle's Politics mentions the importance of an adequate water supply for civil society.¹⁰ In New Mexico, the valleys of the Rio Grande

and its tributaries were the first lands colonized in the Southwest by the Spaniards. In the American settlement of the West, in the 19th century, a major concern involved the adaptation of American civilization to the aridity west of the 100th meridian. Thus, water, unlike fertilizer,¹¹ is a significant and enduring feature of the natural landscape as we know it.

2. Related to the first point, but also separate, is the non-substitutability or limited substitutability of water in some important uses. This is, perhaps, an obtuse way of saying that human beings cannot survive without water; that there are many or most crops which must have water; and that wildlife must also have water. Thus, it is possible to substitute other commodities for some water use in only a limited way. Machines and labor are substitutes; we can ride buses rather than drive automobiles; but the residents of a city cannot, say, substitute plastics for water in its fundamental life sustaining uses.

3. Reinforcing these two aspects of water in the American West is the aridity which characterizes much of the region. We have already noted the key role that John Wesley Powell assigned to water in the West more than a hundred years ago. Even before Powell, the acequias (ditch organizations) of northern New Mexico were the key village organizations in Spanish colonial times. A contemporary view of Western aridity is found in the Wall Street Journal editorial previously cited:

"For semi-arid states with rapidly growing population, a description that fits the entire Southwest quadrant of the country, the water supply is close to a life-or-death concern."

What we are suggesting here is that for most individuals, particularly in the arid West, water is perceived as something more than simply a physical commodity useful in a variety of ways in enhancing material

well-being. Let us illustrate this perception with several examples.

A. In 1983 we conducted a survey of 98 community leaders in a five-county area of northern New Mexico and southern Colorado (Rio Arriba, Taos, and Mora counties in New Mexico; Costilla and Conejos counties in Colorado). This region is heavily Hispanic and was an area of Spanish settlement almost four hundred years ago. At present a limited number of water right sales are occurring in the area, mainly near the larger towns such as Taos, New Mexico. But the attitude toward water sales by the communities in the region is consensus opposition. Over 80% of the leaders interviewed said that people in their community were opposed to water right sales. Hispanic opposition to water right sales appears to have a social and cultural origin. For example, one interviewee said, "I don't think that the native people want to sell their land or their water rights. . . We want to maintain our culture." Interest in preservation of Hispanic culture in the Upper Rio Grande is a value that appears to have top priority, and the consensus opposition to water right sales derives from this and related cultural values.¹²

B. A second illustration of this community value of water is the American Indian effort to gain control over the use of water they feel is legitimately theirs. Indian efforts might be interpreted by some exclusively as attempts to obtain a resource that would improve their economic condition. Certainly the desire for economic improvement accurately describes part of their motivation. But economic gain does not adequately explain 1) the strong desire among many tribes to own the water collectively rather than as individuals, 2) the strong resistance to any sort of a cash settlement that left them without

"wet water," or 3) their preference in many instances to use the water in agriculture, which in the urbanizing parts of the West may not be the most profitable use economically. The crucial aspect of Indian water struggles is, instead, symbolic and cultural. The importance to Indians of control over "wet water" has a significance substantially beyond the dollar revenues that the water might generate. We suggest this interpretation of Indian water struggles is closer to the actual situation than a strictly marketplace interpretation.

C. New Mexico has recently experienced efforts by entities in two neighboring states to obtain "New Mexico" water. The first case, recently decided by the U.S. Supreme Court, concerned an effort by Colorado Fuel & Iron to obtain water from the Vermejo River which rises in Colorado but has been fully appropriated in New Mexico for many decades. The second instance is the El Paso case which has been already described and discussed in previous papers at this meeting. Our point in raising these cases is that the emotional response of both the New Mexico citizenry and its officials cannot in our judgment be explained simply in terms of the economic value of the resource. The perceived stake in the cases is not only economic but even more the fairness or equity of the out-of-state claim and the control of a secure community future that water epitomizes and symbolizes in this arid region. As one water official told us privately, "the trouble with you economists is that you think everything can be added up in dollars and cents."

Now, even if one assents to the perceived importance of water as exceeding its marketplace value,¹³ one may still argue that such perceptions are misguided myths which should be debunked. Indeed,

many economists and lawyers have been trying to accomplish this task for years in arguing that water is not different. Yet the perception persists and is widespread. Whether such debunking efforts are well-founded is a normative argument into which we do not wish to enter today. It is enough for our purposes here to simply report that the community dimension of water is strong and pervasive and that any public policy that denies or ignores it is likely to founder.

Community Value of Water and the Situations of New Mexico and Montana

We now turn to the importance of this community dimension for the water problems of New Mexico and Montana. In New Mexico, a key problem is that there is some remaining unappropriated groundwater which, if appropriated, would ultimately affect streamflow though the future timing of that effect is a matter of hydrologic dispute. There has been an attempt to appropriate some of this water by the City of El Paso, Texas, and this attempt has led to the court case, El Paso v. Reynolds previously mentioned. Consider two separate approaches to the management of this unappropriated groundwater.

1. Commodity approach: In this approach water is to be managed like any market commodity. The unappropriated groundwater is first distributed on some rule with one possible way being the prior appropriation doctrine, that is, first come, first served. From that point the water goes to the entity bidding the greatest number of dollars for it. For example, if an out-of-state company bids highest, water is simply transferred to this bidder.

2. Community approach: The community approach to unappropriated groundwater in New Mexico would begin with the recognition that the few

remaining unappropriated waters in the State are touched by strong elements of public interest. Because there is so little unappropriated water remaining, this water has symbolic and social values well beyond its market value. Thus, the community approach to water implies that the public interest could be asserted through active state appropriation of unappropriated groundwater.¹⁴ New Mexico has not yet studied all of the economic, political, and social issues associated with state appropriation, but two points are clearly important.

(A) If state ownership of unappropriated groundwater is to give the state legal right to allocate this water, the ownership must be more than a "legal fiction"; it must be real. "Real" ownership will involve state financial investment in wells and, perhaps, distribution systems.¹⁵

(B) It would seem that if state ownership of unappropriated groundwater occurs, the state would have power to regulate water sales to out-of-state users.¹⁶ But we also maintain that this power (if it exists) would need to be asserted in a manner consistent with the community importance of water.

As owner of the groundwater, New Mexico should accept some sense of community obligation towards its neighbors and their problems. Note in this regard that the New Mexico Water Law Study Committee report contemplates the possibility of leasing water out-of-state.¹⁷

Now let us turn to your situation here in Montana and examine the implications of our remarks up to this point. First, it should be said that we do not have a detailed familiarity with the water situation you are facing and your evaluation of our comments should take that fact into account. However, it seems clear that there is considerable

unappropriated surface water flowing through the State and that the Missouri River Basin, particularly, contains one of the few substantial bodies of unappropriated water remaining in the West outside of the Pacific Northwest. We suspect that in this situation the remaining water has strong community value beyond its value strictly as a commodity. Thus we would expect to see an assertion of public interest in the remaining water as, indeed, may already have occurred in reaction to South Dakota's agreement with ETSI.

In considering a policy by which to govern its actions relative to this water a state faces two basic questions. First there is the question of what portion of the river it will control, and second there is the question of how it will manage whatever water that it ultimately does control. With respect to the first question, if the water has community value, then that value is almost certainly held by the citizens of all states in the Basin, in Nebraska and Kansas as well as in South Dakota and Montana. State appropriation or any other device for extending one state's claim to the water, while perhaps of tactical value, is not going to obviate the need for an apportionment that is generally judged to be equitable irrespective of how that apportionment is finally obtained. Though extremely unpalatable to western states, there always remains the spectre of strong federal intervention if no formula generally perceived as equitable can be produced by the community of Basin states. Given the tenor of recent U.S. Supreme Court decisions relating to water, federal intervention, at least judicially, would suggest a heavy, perhaps exclusive, reliance on a commodity approach to water so that it would flow to the highest bidder without regard to residence or other criteria.

As for the second question stated above, once the remaining waters in the Missouri Basin have been apportioned, the community approach implies that the State of Montana might usefully consider state appropriation of its unappropriated water. As we have stated, the unappropriated water has strong social and symbolic values. A simple distribution of it according to prior appropriation with subsequent transfer to the highest bidder, even if that bidder were out-of-state, might be inconsistent with the community interest. On the other hand, with state control assured, a leasing to out-of-state users might be acceptable to your citizens. The option would be yours.

Consider the situation of the State of Colorado and the Colorado River Compact. Even with extensive transmountain diversions from the western slope of the Rockies to the urbanized front range, it has not been able to put to consumptive use its allocated share of the River under the compacts. Moreover, there are strong interests supporting the maintenance of streamflows on the west slope for in-stream values, which are considered beneficial uses in Colorado. If the terms of the Colorado River Compact were more agreeable to Colorado, then by state appropriation, the State could preserve in-stream values as well as benefit financially from leasing its water rights to downstream users.

Some of the important features of a state appropriation option, then, can be listed.

(1) The decision about timing of water development is left in public hands. A public desire to conserve or maintain in-stream flows rather than develop can be accommodated.

(2) The state could implement a plan for leasing water that it wishes to use for development. Water leases might go to the highest

dollar bidders, thereby incorporating one of the advantages of water markets.

(3) The state could appropriate some of its remaining water without appropriating all of this water. Thus, the state is free to choose a mixed water economy in which some water is privately owned and some is publicly owned.

Let us now summarize our views on Montana's situation in the Missouri River Basin. First, the community value of water implies a need for an apportionment of unappropriated water in the Missouri Basin. Because we lack knowledge about the comparative merits of Upper Basin and Lower Basin claims to water, we confine our remarks to the idea that this apportionment must be generally perceived as equitable. Second, within the constraints of basinwide apportionment, the community approach to water implies that Montana should consider state appropriation as an institutional device for controlling its share of the remaining water. Some leasing of this publicly owned water would obtain benefits of water markets. Third, there needs to be more study of state appropriation of remaining water before this institutional vehicle is actually used in either New Mexico or Montana. It should be understood, however, that state appropriation would be a major change in the way of conducting water affairs from what has prevailed up to the present. Additional study and discussion of the issues involved would help clarify some of the points we have mentioned.

ENDNOTES

1. The Wall Street Journal, April 26, 1982, p. 24.
2. See the 1962 edition by Harvard University: John Wesley Powell, Report on the Lands of the Arid Region of the United States (Belknap Press of Harvard University Press, Cambridge, Mass., 1962).
3. See Wallace Stegner, Beyond the Hundreth Meridian (Houghton Mifflin Co., Boston, Mass., 1953).
4. U.S. Bureau of Reclamation in cooperation with the State of New Mexico, New Mexico Water Resources: Assessment for Planning Purposes, Nov., 1976.
5. Testimony of Steve Reynolds, N.M. State Engineer, in transcript of proceedings of El Paso v. Reynolds, et. al. in U.S. District Court, Albuquerque, NM, Sept. 13, 1982.
6. Rahman Khoshakhlagh, F. Lee Brown, and Charles DuMars, Forecasting Future Market Values of Water Rights in New Mexico, Water Resources Research Institute Report No. 92, 1977, Las Cruces, NM.
7. See Wallace Stegner's Introduction to the 1962 edition of Powell's Report, op. cit. Also see Richard Alston, Commercial Irrigation Enterprise, Fear of Water Monopoly, and Genesis of Market Distortion in the 19th Century American West (Arno Press, New York, NY, 1978).
8. Khoshakhlagh and associates, op. cit., p. 23.
9. Perhaps the first Greek writer to speak of these four elements was Empedocles. The idea was common by the time of Plato's dialogue, Timaeus. See, for example, G.E.R. Lloyd, Early Greek Science: Thales to Aristotle (W.W. Norton & Co., New York, 1970) pp. 39-42 and pp. 74-77.
10. Aristotle, Politics, 1330 a-b.
11. The noncomparability of water and fertilizer is taken from Arthur Maass and Raymond L. Anderson, ... and the Desert Shall Rejoice (MIT Press, Cambridge, Mass., 1978), p. 5:
"Economic growth, however, is in the case of irrigation agriculture so competitive with other objectives that farmers typically refuse to treat water as a regular economic good, like fertilizer, for example. It is, they say, a special product and should be removed from ordinary market transactions so that farmers can control conflict, maintain popular influence and control, and realize equity and social justice."

12. For a description of the survey, see Lee Brown and Gilbert Bonem, "Survey of Water Use and Water Problems in the Upper Rio Grande," unpublished paper (available on request from the authors), Feb., 1984.
13. For further evidence of this community perception of water see Helen Ingram and Stephen Mumme, "Public Perceptions of Water Issues in the Four Corners States as Indicated Through a Survey of Regional Newspapers: A Preliminary Report" (unpublished paper presented at the Western Social Science Association's 25th Annual Conference, Albuquerque, NM, April 27-30, 1983).
14. The possibility of state appropriation of unappropriated groundwater is mentioned in N.M. Water Law Study Committee, Impact of Recent Court Decisions Concerning Water and Interstate Commerce on Water Resources of the State of New Mexico, Dec., 1983.
15. For discussion of the legal aspects of state appropriation, see N.M. Water Law Study Committee, op. cit., pp. 58-62.
16. For legal aspects of out-of-state sales when the state is a market participant, see N.M. Water Law Study Committee, op. cit., pp. 60-62.
17. Op. cit. p. 60.

THE MONTANA PERSPECTIVE: A RESPONSE TO
ALTERNATIVE POLICY STRATEGIES
FOR WATER MARKETING

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INTRODUCTION

The purpose of this paper is to provide a "Montana perspective" on the three alternative policy strategies on water marketing presented by Dr. Terry Anderson, the Honorable Ronald Robie, and Dr. Lee Brown (the latter in conjunction with Mr. Gilbert Bonem). First, however, to understand the three strategies, a reiteration of the current situation in Montana is necessary.

Unlike most Western states, Montana is a water abundant state. Over 40 million acre feet of water flow out of Montana on the average each year. Depending on how one defines the term, we have a "surplus" of water in Montana. This doesn't mean, necessarily, that we have an abundance of unused or unappropriated water, but that there are other uses for which some of the water flowing through our state could be put without having any significant impact on existing uses. And, more to the point of this paper, there are "surplus" waters available for marketing for out-of-state uses, perhaps over 1 million acre feet per year.

As in seven other Western states, the Appropriation Doctrine of water law applies in Montana.¹ The Doctrine governs the acquisition and exercise of water rights to appropriate water under state law. It does not apply to all situations, however. For example, federal reserved water rights are created under federal law, not under the Appropriation Doctrine.

In its pure form, the Doctrine provides that anyone (an individual, a company, the state, the federal government, etc.) may acquire a legally protected right to use water if he appropriates it and puts the water to a beneficial use.² Each water right may be exercised in the order of its priority ("first in time is first in right"), which is calculated from the date when the water was first used. A junior priority right cannot be exercised so as to impair the exercise of a more senior right. The water right is a right to use water, not an ownership in the water itself. It is a property right, and therefore entitled to the constitutional guarantees of due process as are all other property rights. The right can be freely transferred to anyone else. However, the purpose of use, point of diversion, place of use, or method of transmission of the water appropriated pursuant to the right cannot be changed if other rights (senior or junior) are impaired.

That basic system is still the law in Montana. Until 1973, in fact, anyone could acquire water rights by either getting them from someone else or by appropriating water for a new right, without any notice or agency approval whatsoever. Now, with the enactment of the Water Use Act in 1973, an administrative approval system is superimposed on the Appropriation Doctrine, whereby new water rights and changes in water rights must be first approved by the DNRC. However, the substantive Appropriation Doctrine law is basically the same; only the procedure to acquire and change water rights has been changed.

Insofar as water marketing is concerned, there is nothing in the

existing law which prohibits the marketing of water per se; individuals, districts, companies, the state, and the federal government are marketing (selling) water to others in Montana today from numerous water projects. The only significant legal restrictions on the marketing of water are that water cannot be used for coal slurry purposes,³ that new appropriations by water right permits over 10,000 acre-feet a year or 15cfs must first meet stringent criteria in addition to the usual criteria under the Appropriation Doctrine, and be ratified by the Legislature,⁴ and that water cannot be transferred outside of the Yellowstone Basin without the consent of Montana, Wyoming and North Dakota.⁵

With this context in mind, let's look at each of the three proposed strategies.

ANDERSON FREE MARKET STRATEGY

Dr. Anderson's stimulating paper advocates a "free market" approach to the allocation of water. However, it is not clear to this author whether Dr. Anderson is advocating an absolute free market, or a modified free market. Nor is it clear whether a free market in water rights is advocated, or a free market in water ownership (the two are quite different, as will be explained). Essentially, though, it appears that Dr. Anderson advocates the removal of all legally im-

posed restrictions and impediments to the appropriation and use of water, whether they come from the statutes, the constitutions, or the courts.

The dilemma of the free market approach is that it cannot satisfactorily answer the concerns of the vast majority of people who believe that the public interest is often more important than private economic gain. The assumption seems to be that a free market will automatically result in the public interest being served. It is this author's considered opinion, and experience, that such an assumption is very unrealistic and naive, particularly in the field of water use and allocation.

Montana essentially had a free market system in water rights prior to 1973. Water rights could be acquired, bought, sold, transferred, or changed at will, with two minor exceptions. Of course, the requirements of the Appropriation Doctrine applied, which Dr. Anderson implies are also impediments to a free market.⁶

Utter chaos resulted. There was hardly any documentation available on who owned water rights, so no one knew if water would actually be available for appropriation when he needed it. Thus, it was almost impossible to make an informed decision regarding the economic feasibility of a water development project. To resolve disputes over water rights, litigation abounded, never with any final resolution. One stream even went to the Montana Supreme Court 11 times, and it still was not settled.⁷ The expense to protect one's

rights in the courts was considerable, and in many cases prohibitive. So much for a free market!

The Water Use Act of 1973 was enacted to bring order out of this chaos. The basic Appropriations Doctrine was retained, but henceforth prior water rights would be protected by requiring DNRC approval, applying the Doctrine's criteria, before new rights could be acquired. The same was true for changes in water rights. Litigation immediately declined. And, thanks to the Water Use Act and amendments to the Act made in 1979, potential water developers can now ascertain with some certainty whether or not water will be available to appropriate, and thus whether an investment to appropriate water is an economically wise decision. So we can see that some state regulation in this area has actually facilitated the market place.⁸

How the free market approach advocated by Dr. Anderson applies to water marketing is also unclear. Should anyone be allowed to sell water to anyone for out-of-state use? That in fact can be done today, except for coal slurry use, albeit with some considerable hurdles, depending on the amount of water to be appropriated. Should anyone be allowed to transfer his water right to market water to anyone else? That can also be done, with the same caveats on the actual use of the water. But of course it's unlikely that anyone could or would want to buy the water right for Fort Peck Reservoir for example, or even that the federal government would sell it. And, should the ownership of all water be transferred to private hands?

This last question stems from the confusion in Dr. Anderson's paper between water rights and water ownership. It's therefore difficult to tell exactly what is being advocated. However, it is obvious that the transfer of ownership of all water to private hands is politically impossible. It is also legally impossible. Most water rights, on the other hand, are already in private ownership.

In Montana, the water flowing in our streams and held in the ground is "owned" by the state. The Montana Constitution claims as much.⁹ This has probably always been the case anyhow or nearly so in effect, because early on it was determined by our Supreme Court that water was subject to the control of the state, and publici juris (in the jurisdiction of the public).¹⁰ Whether the water is actually "owned" by the state in a legal sense is probably unimportant, however; it's clear that it's not owned by anyone else, and that the state can control its use. There are some exceptions to state control, though, where the federal government and Indian reservations are concerned, and in other instances.¹¹

As has already been noted, appropriators acquire only rights to use the water in Montana. But those rights are property rights, entitled to full legal protection as such. So, if one wanted to transfer the "ownership" of water to private hands, those water rights would still have to be protected. Therefore, either existing water right holders would still be entitled to use the water as they always have or they would have to voluntarily give them up or be compensated for them if the "owner" of the water wanted to regain total control of

the water so he could market it freely. To accomplish all this politically, legally, or even practically, is difficult to imagine.

Certainly the Montana Constitution would have to be amended where it requires the Legislature to "provide for the administration, control, and regulation of water rights and (to) establish a system of centralized records...."¹² In addition, the Water Use Act would have to be repealed and Court adjudication of our water rights would have to be stopped. Finally, somehow all water rights and ownership in the corpus of the water itself would have to be transferred to private hands. This latter requirement presents another interesting problem. It has been made clear that water is held in trust for the public by the state (the public trust doctrine). Our own Montana Supreme Court recognized the doctrine for the first time in its recent decision in the Curran case.¹³ In this author's opinion, the public trust doctrine would flatly prohibit the transfer of water ownership to private hands, even by an act of the Legislature.

However, even if all the legal hurdles could be overcome to accomplish a free market, the fundamental problem with the free market approach is still that it fails to protect Montana's interests. Montanans simply will not accept the purchase and/or development of Montana's surplus water by large out-of-state interests without some assurance that Montana's existing and future needs will first be guaranteed, that farmers' and ranchers' water rights will not be sold to the highest bidder, that pipelines and canals will be sited and constructed in a socially and environmentally sound manner, and that

all the other myriad of concerns to Montana will be adequately addressed. Dr. Brown said it well in his paper; there is a community interest in water, as well as a commodity interest.

ROBIE STATE DEVELOPMENT STRATEGY

Contrary to the free market strategy presented by Dr. Anderson, Judge Robie advocates a strong leadership role by state government in water marketing. Drawing upon his considerable experience in a state that does exactly that, Robie suggests that the state itself serve as the project developer of any facility to transfer water out of the state so it can best control water marketing in the state's interests. As a part of that strategy, he emphasizes the importance of generating realistic data to ensure that the future water needs of the "area of origin" are met before water is transferred from that area; he further advocates that any state developed water marketing program should include financial benefits to local government.

Legally, little change in the existing law would be needed to accomplish Judge Robie's scenario, except the following:

1. Removal of the ban on use of water for coal slurry;
2. The enactment of a mechanism to ensure that the state would have the exclusive right to develop water for transfer out of state, if this is desired. Constitutional problems with this mechanism

would be encountered;

3. Setting up a funding mechanism for local government.

Under current law the DNRC already has the authority to construct water development projects. It can market water for out-of-state uses, except for coal slurry, and it can do this without legislative approval if no new water permits are needed. It can sell the water for what the market will bear, but those funds must be deposited in an earmarked fund, so they could not be transferred to local government without authority to do so. (However, it would be possible to require a purchaser of water from a state developed project as a condition of purchase to fund projects to meet local needs.)

In the opinion of this author, Judge Robie's suggested strategy has considerable merit. The DNRC has actually investigated the idea in the development of plans to rehabilitate the Tongue River dam. Not only would the state have more effective control over what water transfers took place, and in what manner the development projects were built, but the desires and concerns of Montanans should be more adequately addressed because the DNRC is politically accountable, through the Governor and the Legislature, for its actions.

Judge Robie's suggested strategy is not without its problems, however. One of the main ones is that state government historically has not done a particularly admirable job in developing water resources through its own water projects. Many of them were built with little thought given to their economic feasibility and long term maintenance.

Dr. Anderson's assertion that government has financed many uneconomic water projects is certainly true in Montana.

BROWN/BONEM COMMUNITY STRATEGY

The "community" strategy advanced by Dr. Brown and Mr. Bonem also asserts that state control of water marketing is desirable. After cogently listing the disadvantages of a free market system, their thoughtful paper argues that at least as to water there is a community interest which transcends a pure free market, and the state should consider actually "appropriating" some surplus water itself for eventual marketing for out-of-state uses so that the community interest will be better served.

The Brown/Bonem strategy can be accomplished under existing law, except that again the ban on water for coal slurry would have to be removed. In addition, additional legislation may be needed to enable the state to sell its appropriated but nondeveloped waters.

These are basically three methods by which the state could "appropriate" water to control its use. One is by the state itself building the water projects to transfer the water -- the Robie strategy. The second is by acquiring the right to market a block of water by first obtaining a permit or a water reservation (a water right) and then selling the water obtained thereby. This probably cannot

be done under existing law unless a physical diversion or impoundment were also constructed by the state. The third method is by acquiring the right to market a block of water from a reservoir for which the water right is held by a third party.

All three of these methods are already being pursued to one degree or another. The first method has been discussed earlier in this paper, and is being investigated on the Tongue. The DNRC has reserved water in the Yellowstone Basin for the Tongue Reservoir, which has the effect of combining the first and second methods. And the DNRC has the right by contract to market 300,000 acre-feet of water from the federally owned Fort Peck Reservoir; a similar contract is being negotiated on the Yellowtail Reservoir.

The Brown/Bonem strategy also has merit. Like the Robie strategy, the interests of Montana (the "community") will be more adequately addressed through some degree of state control.

CONCLUSION

All three proposed strategies deserve further discussion. While in the opinion of this author the Anderson free market approach is thought provoking, it is unrealistic to accomplish, both politically and legally. But more importantly, the short and long term interests of Montana cannot be adequately met in a free market. The Robie and

Brown/Bonem approaches more closely take into account the state's interests, provincial as they may be, and they would involve considerably less legal changes to accommodate them.

NOTES

1. The other states are Arizona, Colorado, Idaho, Nevada, New Mexico, Utah, and Wyoming. The riparian system of water rights has never applied in Montana. Atchison v. Peterson, 1 Mont. 561, 569 (1872), aff'd, 87 U.S. 507 (1874); Mettler v. Ames Realty Co., Mont. 152, 201 P. 702 (1921).
2. The federal government, of course, can acquire water rights or appropriate and control water by other methods.
3. 85-2-104, MCA. The ban on using water for coal slurry is a statutory ban, not a constitutional ban as stated in Dr. Anderson's paper at page 7.
4. 85-2-311, MCA.
5. Article X, Yellowstone River Compact, 85-20-101, MCA.
6. One of those is the requirement of beneficial use, the basis and measure of an appropriation water right.
7. Dempsey Creek. See Stone, The Long Count on Dempsey: No Final Decision in Water Right Adjudication, 31 Mont. L. Rev. 1 (1969).
8. In 1975 an amendment was made to the Water Use Act which

prohibits changing an agricultural right of more than 15cfs to an industrial use. This provision is obviously an impediment to a free market. 85-2-402(3), MCA.

9. Article IX, Section 3(3), 1972 Montana Constitution.
10. Mettler, supra note 1; Rock Creek Ditch & Flume Co. v. Miller, 93 Mont. 248, 17 P.2d 1074 (1933).
11. These exceptions include federal reserved water rights, and the exercise of the navigation servitude, among many others.
12. Article IX, Section 3(4), 1972 Montana Constitution.
13. Montana Coalition for Stream Access, Inc. et al. v. Curran, _____ Mont. _____, _____ P.2d _____, 41 St. Rptr. 906 (1984).

